



STIC Search Report

EIC 2800

STIC Database Tracking Number: 177469

TO: Andre Allen
Location: JEF 9A41
Art Unit : 2855
Tuesday, January 31, 2006
Case Serial Number: 10/709155

From: Bode Fagbohunka
Location: EIC 2800
Jeff 4A58
Phone: 571-272-2541
bode.fagbohunka@uspto.gov

Search Notes

Examiner **Andre Allen**

Please find attached the results of your search for **10/709155**. The search was conducted using the standard collection of databases on dialog for EIC 2800. The tagged references appear to be the closest references located during our search.

If you would like a re-focus please let me know or if you have any questions regarding the search results please do not hesitate to contact me.

Bode Fagbohunka



STIC Search Results Feedback Form

EIC 2800

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Jeff Harrison, EIC 2800 Team Leader
571-272-2511, JEF 4B68

Voluntary Results Feedback Form

➤ I am an examiner in Workgroup: Example: 2810

➤ Relevant prior art found, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not** found:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/EIC2800, CP4-9G18



SEARCH REQUEST FORM Scientific and Technical Information Center - EIC2800

Rev. 3/15/2004 This is an experimental format -- Please give suggestions or comments to Jeff Harrison, JEF-4B68, 272-2511.

Date 1-24-06 Serial # 101709 155 Priority Application Date _____
 Your Name ANDRE ALLEN Examiner # 98079
 AU 2855 Phone 22174 Room 9A41
 In what format would you like your results? Paper is the default. ☒ PAPER ☐ DISK ☐ EMAIL

If submitting more than one search, please prioritize in order of need.

The EIC searcher normally will contact you before beginning a prior art search. If you would like to sit with a searcher for an interactive search, please notify one of the searchers.

Where have you searched so far on this case?

Circle: ☒ USPT ☒ DWPI ☒ EPO Abs ☒ JPO Abs ☒ IBM TDB
 Other: USOC2

What relevant art have you found so far? Please attach pertinent citations or Information Disclosure Statements.

2003/0071727, 5323317, 5531114

What types of references would you like? Please checkmark:

Primary Refs ☒ Nonpatent Literature ☒ Other _____
 Secondary Refs ☒ Foreign Patents ☒
 Teaching Refs ☒

What is the topic, such as the **novelty**, motivation, utility, or other specific facets defining the desired **focus** of this search? Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.

- Providing a reference and information
 - A run-off circuit
 - A rain gauge that measures a runoff
 * only search claims 1-19

Staff Use Only

Searcher: Bone Recommen
 Searcher Phone: 22541
 Searcher Location: STIC-EIC2800, JEF-4B68
 Date Searcher Picked Up: 1-31-06
 Date Completed: 1-31-06
 Searcher Prep/Rev Time: 30
 Online Time: 230

Type of Search

Structure (#) _____
 Bibliographic ☒
 Litigation _____
 Fulltext _____
 Patent Family ☒
 Other _____

Vendors

STN _____
 Dialog ☒
 Questel/Orbit ☒
 Lexis-Nexis _____
 WWW/Internet _____
 Other _____

6702517 2003/0071737 (RANOFF?)
5323317 5531114 (RANOFF?)
2923148
Appl. No. 10/709,155

Response dated November 11, 2005

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all earlier versions.

Please amend the claims as follows.

1. (original) A rain runoff gauge, comprising:
 - a collector tube having an opening for receiving precipitation;
 - an infiltration circuit providing a reference soil infiltration resistance in communication with the collector tube;
 - a runoff circuit in communication with the collector tube providing runoff characteristics of a surface of the reference soil;
 - a runoff collection tube to receive runoff from the runoff circuit,
 - and
 - a measurement system for reading runoff to the runoff collection tube.
2. (original) The runoff gauge of claim 1, wherein the runoff circuit includes an air backflow seal between the collector tube and the runoff collection tube.
3. (original) The runoff gauge of claim 2, further comprising:
 - a balance line attached between the runoff collection tube and a ground surface to maintain a backpressure head in the runoff circuit matching a water depth above the ground surface.

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4. (original) The runoff gauge of claim 3, further comprising:
a ground connector attached to the balance line having one or more
apertures at a distal end, wherein said distal end is in contact
with the ground surface.
5. (original) The runoff gauge of claim 1, further comprising an
insulating shroud located about the collector tube.
6. (original) The runoff gauge of claim 1 wherein the collector tube
includes a removable bottom closure having a drain hole.
7. (original) The runoff gauge of claim 6 wherein the bottom closure
of the collector tube includes a substantially vertical drip tube.
8. (original) The runoff gauge of claim 1 wherein the collector tube is
cylindrical with an open bottom to receive a sample of the
reference soil when inserted directly into ground.
9. (original) The runoff gauge of claim 1 wherein the collector tube
further comprises a high level recorder.
10. (original) The runoff gauge of claim 9 wherein the high level
recorder comprises a rod coated with a water resistant material
painted with a water-soluble dye, and a cap positioned within the
collector tube above the infiltration circuit and having a surface
area smaller than a cross-sectional area of the collector tube.

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Response dated November 11, 2005

11. (original) The runoff gauge of claim 1 wherein the infiltration circuit includes a reference soil specimen.
12. (original) The runoff gauge of claim 1, wherein the runoff collection tube includes a drain valve.
13. (original) The runoff gauge of claim 1, further comprising a frame connected to the collector tube, a standard rain gauge and the runoff collection tube, wherein the frame is attached to support to maintain the rain gauge and collector tube in a vertical orientation with openings above ground level to receive precipitation.
14. (original) The runoff gauge of claim 1 wherein the runoff circuit includes an independently adjustable runoff resistance.
15. (original) The runoff gauge of claim 14, the runoff circuit further comprising:

an upper horizontal tube and a lower horizontal tube, the horizontal tubes connected by an upstream vertical tube and a downstream vertical tube;

wherein the upper horizontal tube connects an outlet of the collector tube and an inlet of the runoff collection tube, and includes a non-permeable plug therein, and the lower horizontal tube includes a filter medium; and

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Response dated November 11, 2005

a screw in the downstream vertical tube to adjust flow resistance.

16. (original) A method for measuring rain runoff, comprising:

collecting precipitation in a collector tube;

passing a first portion of the collected precipitation to an

infiltration circuit providing infiltration resistance

characteristics of a reference soil;

passing a second portion of the collected precipitation to a runoff

circuit providing runoff characteristics of a surface of the

reference soil;

collecting the second portion in a runoff collection tube; and

measuring the precipitation collected in the runoff collection tube.

17. (original) The method of claim 16, further comprising:

developing a pressure imbalance wherein a head of water in the

collector tube is greater than a backpressure head in the runoff

circuit provided by a ground level water depth; and

passing water from the collector tube through the runoff circuit to

restore pressure balance.

18. (original) A method for measuring soil infiltration of rain,

comprising:

measuring total precipitation;

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Response dated November 11, 2005

measuring rain runoff according the method of claim 16;
determining soil infiltration by the difference between the total
precipitation and the rain runoff.

19. (original) A method for calibrating the runoff rain gauge of claim
14, comprising:

measuring an average maximum water depth for the reference soil
and a maximum water depth for the collector tube during a rain
event; and
adjusting the runoff resistance in proportion to any difference
between the measured average maximum water depth for the
reference soil and the maximum water depth for the collector
tube.

20. (canceled)

21. (withdrawn) A method for cultivating plants growing in soil,
comprising:

positioning a rain runoff gauge adjacent a soil location, wherein
the gauge includes a collector tube, an infiltration circuit and a
runoff circuit, the infiltration circuit providing an infiltration
resistance having characteristics of the soil and the runoff
circuit providing runoff characteristics of a surface of the soil;

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collecting ambient precipitation in the collector tube;
passing a first portion of the collected precipitation through the
infiltration circuit;
passing a second portion of the collected precipitation through the
runoff circuit and collecting the second portion in a runoff
collection tube;
measuring the second portion in the runoff collection tube;
measuring total precipitation; and
irrigating the soil as a function of the measured runoff and
measured precipitation.

Day : Tuesday
Date: 1/31/2006

Time: 10:58:03

**PALM INTRANET****Application Number Information**

Application Number: 10/709155

Examiner Number: 78079 / ALLEN, ANDRE

Assignments

Filing or 371(c) Date: 04/16/2004

Group Art Unit: 2855

IFW IMAGE

Effective Date: 04/16/2004

Class/Subclass:
073/170.160

Application Received: 04/16/2004

Lost Case: NO

Waiting for Response

Patent Number:

Interference Number:

Desc.

Issue Date: 00/00/0000

Unmatched Petition: NO

EIDS

Date of Abandonment: 00/00/0000

L&R Code: Secrecy Code:1

Attorney Docket Number: NOE-02

Third Level Review: NO

Secrecy Order: NO

Status: 71 /RESPONSE TO NON-FINAL OFFICE ACTION
ENTERED AND FORWARDED TO EXAMINER

Status Date: 11/16/2005

Confirmation Number: 3154

Oral Hearing: NO

Title of Invention: RUNOFF RAIN GAUGE

Bar Code	PALM Location	Location Date	Charge to Loc	Charge to Name	Employee Name	Location
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Appln
Info

Contents

Petition Info

Atty/Agent Info

Continuity Data

Foreign Data

Inv

Search Another: Application#

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or Patent#

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PCT /

Search

or PG PUBS #

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Attorney Docket #

Search

Bar Code #

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RUNOFF RAIN GAUGE

Abstract

Disclosed is a runoff rain gauge 100 which includes a collector tube 104, soil infiltration resistance medium 108, a runoff resistance flow element 113, a standard rain gauge 102, and runoff collection tube 114. Precipitation enters the collector tube 104 and is divided to flow into the infiltration medium 108 and runoff collection tube 114 via flow element 113. Total precipitation is read in standard rain gauge 102, runoff in tube 114, and soil infiltration in medium 108 is calculated by the difference between total precipitation and the runoff.

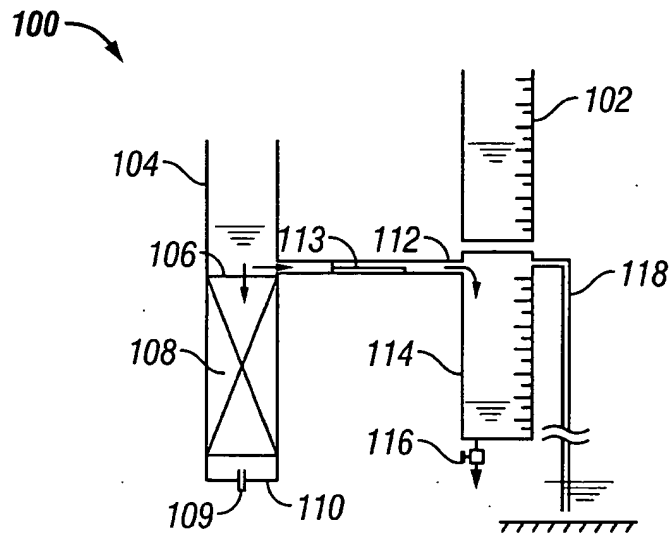


FIG. 1

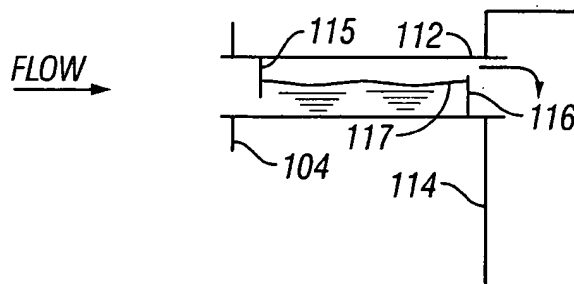


FIG. 1A

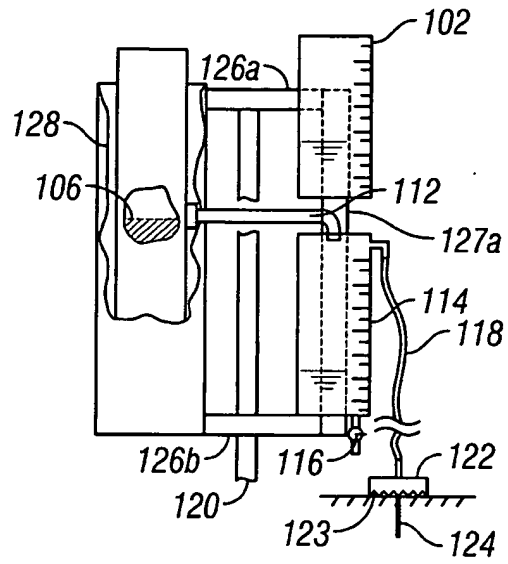


FIG. 2

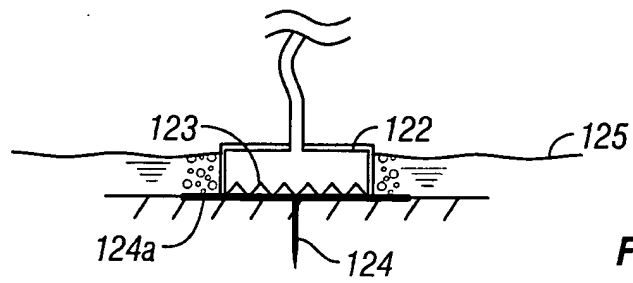


FIG. 2A

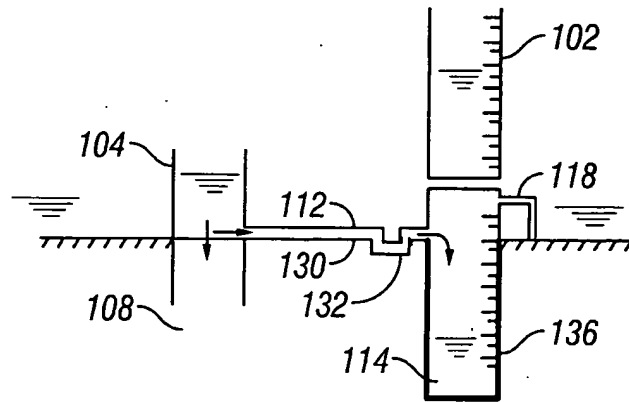


FIG. 3

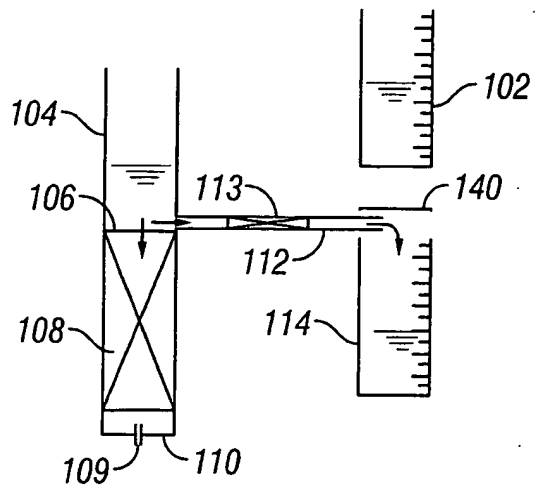


FIG. 4

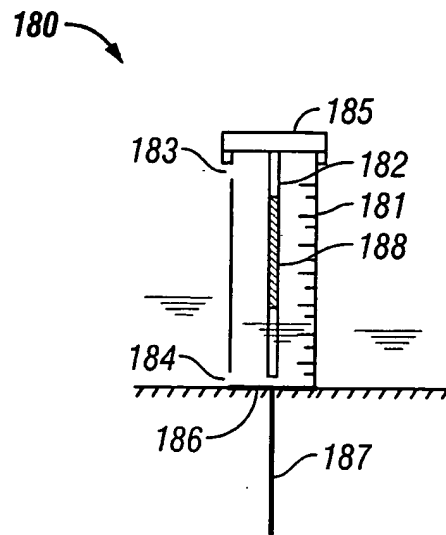


FIG. 5

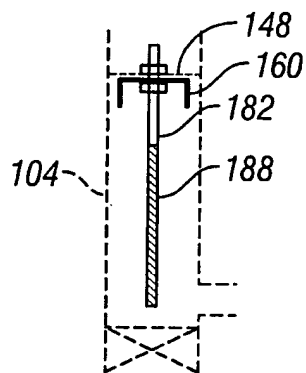


FIG. 6

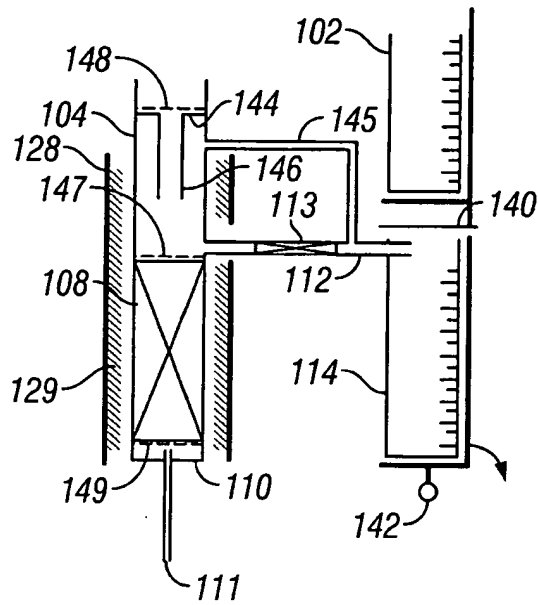


FIG. 7

200 →

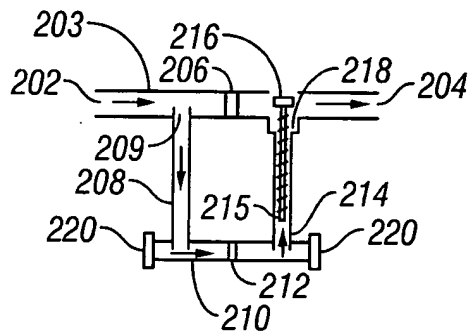


FIG. 8

Query/Command : his

File : FAMPAT


SS Results

1	1	(1) ..FAM US5531114/PN
2	8	..CITB US5531114/PN
3	5	..CITF US5531114/PN
4	1	(1) ..FAM US5323317/PN
5	5	..CITB US5323317/PN
6	16	..CITF US5323317/PN
7	1	(1) ..FAM US20030071737/PN
8	1	..CITB US20030071737/PN
9	2	..CITF US20030071737/PN






Search statement 10

Query/Command : prt max set

1 / 8 FAMPAT - ©QUESTEL-ORBIT - image


FAN - 20042780914764
PN -  US5531114 A 19960702 [US5531114]
TI - Rain gauge
IN - FRAGER JAMES R
AP - 1995US-0408733 19950322
PR - 1995US-0408733 19950322
IC - G01W-001/00
EC - G01W-001/14
PCL - ORIGINAL (O) : 073170170; CROSS-REFERENCE (X) : 073170210
CT - (US5531114)
US-916060; US2384954; US2570710; US2935872; US3826135; US4665744;
US5291799
AB - (US5531114)
A rain gauge comprising a graduated open end rain collection tube having fins on its lower end. The tube is pivotally mounted at its mid point on a pin secured to one end of a swivel arm rudder, the other end of said swivel arm rudder being mounted for rotation on the end of a support rod stuck into the ground. Wind on the rudder and fins causes the tube to tilt and turn into the wind with the open end facing the rain.
UP - 2000-08

2 / 8 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042772252415
PN - GB9316418 D0 19930922 [GB9316418]
 US5291799 A 19940308 [US5291799]
 CA2101986 A1 19940326 [CA2101986]
 GB2270960 A 19940330 [GB2270960]
 DE4332440 A1 19940331 [DE4332440]
MX9305194 A1 19940331 [MX9305194]
 JP6221346 A 19940809 [JP06221346]
GB2270960 B 19951004 [GB2270960]
TI - Unitary ratio selector mechanism for a multiple ratio manual transmission
PA - BORG WARNER AUTOMOTIVE
PA0 - Borg-Warner Automotive, Inc., Sterling Heights MI [US]
IN - SEAMAN ROBERT L
IN0 - SEAMAN ROBERT L
AP - 1992US-0951051 19920925; 1993CA-2101986 19930805; 1993GB-0016418
19930806; 1993MX-0005194 19930826
1993DE-4332440 19930923; 1993JP-0238238 19930924
PR - 1992US-0951051 19920925
IC - F16H-061/00

- EC** - F16H-061/24
F16H-063/20
- PCL** - ORIGINAL (O) : 074473210
- CT** - (US5291799)
US1791137; US3387501; US4033200; US4305308; US4307624; US4335623;
US4338828; US4515029; US4726249; US4799399; US5052238; US5105674;
CH221774
- CT** - (GB9316418)
Cited in the search report
GB1196882(A);GB1402520(A);GB2076085(A);US5060538(A)
- AB** - (US5291799)
A manual transmission mechanism adapted for use in an engine-driven automotive vehicle comprising a mainshaft and a countershaft, gearing arranged on each of said shafts, and synchronizer clutch structure which is arranged to accommodate a shift linkage mechanism for actuating the synchronizer clutch sleeve so the synchronizer clutch arrangement which makes possible a location of the driver-operated shift linkage in close proximity to the synchronizer clutch sleeves, permitting an efficient shift pattern for the driver-controlled shifter and permitting a simplified assembly of the linkage mechanism with minimum stack-up tolerance errors.
- UP** - 2000-08

3 / 8 FAMPAT - ©QUESTEL-ORBIT - image


- FAN** - 20042752954242
- PN** -  US4665744 A 19870519 [US4665744]
- TI** - Combined rain gauge and weather vane
- PA** - SMITH DAVID G
- IN** - SMITH DAVID G
- AP** - 1985US-0736354 19850521
- PR** - 1985US-0736354 19850521
- IC** - G01W-001/04 G01W-001/14
- EC** - G01W-001/04
G01W-001/14
- PCL** - ORIGINAL (O) : 073170170; CROSS-REFERENCE (X) : 073170050
D10059000
- CT** - (US4665744)
US-916060; US2384954; US2520557; US2570710; US2935872; US3055215;
US3826135
- AB** - (US4665744)
A combined wind direction indicator and rain gauge is described in which the rain gauge is mounted on a vertically suspended sail at one end of a horizontally disposed elongated member which rotates in a horizontal circle in response to the force of impinging wind. The rain gauge is so disposed that it is always maintained with its open mouth pointed into the direction of wind and at an angle of such that it coincides with the inclination of disending rainfall. Accuracy in measuring rainfall over a given period of time is thereby enhanced since the

amount of rainfall collected will not be influenced by the angle of decent thereof. The device is further characterized by having a weighted head at the end of the elongated member remote from the rain gauge to counter balance the weight of the rain gauge and the sail on which it is mounted.

UP - 2000-08

4 / 8 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042730997079

PN -  US3826135 A 19740730 [US3826135]

TI - SWINGING RAIN GAUGE

PA - HOLLMANN E

IN - HOLLMANN E

AP - 1973US-0346599 19730330

PR - 1973US-0346599 19730330

IC - G01W-001/02 G01W-001/14

EC - G01W-001/14

PCL - ORIGINAL (O) : 073170070; CROSS-REFERENCE (X) : 073170150
073170170


CT - (US3826135)
US1118259; US2384954; US2520557; US2935872; GB292776

AB - (US3826135)
A rain gauge which accurately measures rainfall regardless of the presence of wind, comprising a vertical support rod, a wind operated directional fin, said fin rotatably mounted on said rod for rotational movement responsive to the direction of wind, a wind operated rain gauge support pivotally connected to said fin about a horizontal axis adjacent said rod and movable with said fin and pivotally movable about said horizontal axis responsive to the velocity of wind, and rain collecting receptacle means carried by the support and movable therewith for accurately collecting and measuring rainfall regardless of the presence or direction or velocity of wind.

UP - 2000-08

5 / 8 FAMPAT - ©QUESTEL-ORBIT

FAN - 20042721101104

PN -  US2935872 A 19600510 [US2935872]

TI - Weather gauge

IN - MISNER RICHARD I

AP - 1958US-0759575 19580908

PR - 1958US-0759575 19580908


EC - G01P-005/02

PCL - ORIGINAL (O) : 073170070; CROSS-REFERENCE (X) : 073170150
073170210


IDT - 42I20

UP - 2001-35


6 / 8 FAMPAT - ©QUESTEL-ORBIT

FAN - 20042713072478
PN -  US2384954 A 19450918 [US2384954]
TI - Rain gauge
IN - MOORE JAMES B
AP - 1944US-0567222 19441208
PR - 1944US-0567222 19441208
EC - G01W-001/14
PCL - ORIGINAL (O) : 073170170; CROSS-REFERENCE (X) : 073170050
073170150
UP - 2001-31

7 / 8 FAMPAT - ©QUESTEL-ORBIT

FAN - 20042703019722
PN -  US2570710 A 0 [US2570710]
AP - US2570710D 0
PCL - ORIGINAL (O) : 073170170; CROSS-REFERENCE (X) : 073170050
073170150
IDT - 123US
UP - 2001-19


8 / 8 FAMPAT - ©QUESTEL-ORBIT

FAN - 20042700885893
PN -  US916060 A 0 [US-916060]
AP - US916060D 0
PCL - ORIGINAL (O) : 073170170; CROSS-REFERENCE (X) : 073170050
073170150
IDT - 123US
UP - 2000-49


Search statement 3

Query/Command : prt max set

1 / 5 FAMPAT - ©QUESTEL-ORBIT

FAN - 20042800174275
PN -  US6363781 B1 20020402 [US6363781]
TI - Dynamic rain gauge assembly
IN - MOORE DAVID G
AP - 2000US-0523008 20000310
PR - 2000US-0523008 20000310
IC - G01W-001/00
EC - G01W-001/14
PCL - ORIGINAL (O) : 073170170
CT - (US6363781)
US1118259; US1153355; US2509522; US2520557; US3826135; US5531114
AB - (US6363781)
A rain gauge assembly has a collection cylinder situated within a vertical support housing. The lowermost portion of the collection cylinder comes to a point which rests upon the bottommost surface of the support housing. The uppermost portion of the collection cylinder is supported by the uppermost portion of the support housing. Connected to the uppermost portion of the collection cylinder is a flexible connector which is connected to a collector and a collector funnel. Affixed to the collector is a wind deflector support arm. The wind deflector support arm is attached to a vertical deflecting fin and a horizontal deflecting fin. The vertical and horizontal fins are situated in perpendicular planes for reacting to both wind direction and wind velocity, respectively.
UP - 2002-15

2 / 5 FAMPAT - ©QUESTEL-ORBIT - image


FAN - 20042792648794
PN -  US6494089 B1 20021217 [US6494089]
TI - Rain gauge
IN - GESCHWENDER ROBERT C
AP - 1999US-0450542 19991130
PR - 1999US-0450542 19991130
IC - G01W-001/00
EC - G01F-023/02
G01W-001/14
PCL - ORIGINAL (O) : 073170210
CT - (US6494089)
US2513605; US2907206; US2935872; US2997876; US4106336; US5531114
Rain Cones, E-708 and E-706; Enduro Catalog, 1993; p. 28.
Morco Specialty Advertising Products 1991 Catalog; pp. 24-25 (no date).
AB - (US6494089)

A rain gauge includes a cylindrical tubular water holder and a flat surface having large rainfall value indicators upon it arranged so that they indicate an amount of rain that has fallen with reference to the water in the water holder and thus are easily readable from a distance. The tubular water holder can be rotated so that indications on it are visible through the curved surface of the cylindrical tube and thus magnified below the water level but not magnified above the water level.

UP - 2003-02

3 / 5 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042791311045

PN -  US5970788 A 19991026 [US5970788]

TI - Rain deflector

IN - KINCHELOE JOHN M

AP - 1998US-0104556 19980625

PR - 1998US-0104556 19980625

IC - G01W-001/00

EC - G01W-001/14

PCL - ORIGINAL (O) : 073170210


CT - (US5970788)
US-764315; US-916060; US2384954; US2570710; US2935872; US3039304;
US3826135; US4578995; US4665744; US4895022; US5291779; US5531114;
US5571963; DE606170; SU245407

AB - (US5970788)
A rain deflector for use with a rain gauge comprises a base portion, at least one arm portion having an axis and extending upwardly from the base portion, and attachment means whereby the deflector can be secured to a rain gauge. The arm portion provides an obstruction to rain falling in a direction at an angle to the axis of the arm portion and deposits the rain obstructed into the rain gauge to thereby compensate for rain which would not otherwise be captured in the rain gauge as a result of the direction of the rainfall.

UP - 2000-08

4 / 5 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042790518910

PN -  US5918277 A 19990629 [US5918277]

TI - Apparatus for measuring directional rainfall or snow

IN - YILMAZ G GEORGE

AP - 1997US-0905125 19970801

PR - 1997US-0905125 19970801

IC - A63B-053/00 G01W-001/00

EC - G01W-001/14


PCL - ORIGINAL (O) : 073170170; CROSS-REFERENCE (X) : 073170050

CT - (US5918277)
US-916060; US1407068; US2384954; US2570710; US3826135; US3900962;

US5291779; US5531114; SU504999

- AB** - (US5918277)
Present invention provides an apparatus for measuring directional rainfall or snow incorporating variables of a drainage basin including slope of topography and vertical barriers and direction of wind vector all of which are calibrated to the drainage basin. The apparatus includes an angular collection unit having a main angle and a secondary angle and a vertical capture plate adjusted at the height representative of vertical and a positioning unit which positions the angular collection unit in the direction of wind. Using the apparatus, rainfall or snowfall is measured as a function of basin topography and wind conditions eliminating a large number of rainfall and snowfall gauges for averaging purposes to obtain more representative and accurate measurements.
- UP** - 2000-08


5 / 5 FAMPAT - ©QUESTEL-ORBIT - image

- FAN** - 20042780914764
- PN** -  US5531114 A 19960702 [US5531114]
- TI** - Rain gauge
- IN** - FRAGER JAMES R
- AP** - 1995US-0408733 19950322
- PR** - 1995US-0408733 19950322
- IC** - G01W-001/00
- EC** - G01W-001/14
- PCL** - ORIGINAL (O) : 073170170; CROSS-REFERENCE (X) : 073170210
- CT** - (US5531114)
US-916060; US2384954; US2570710; US2935872; US3826135; US4665744;
US5291799
- AB** - (US5531114)
A rain gauge comprising a graduated open end rain collection tube having fins on its lower end. The tube is pivotally mounted at its mid point on a pin secured to one end of a swivel arm rudder, the other end of said swivel arm rudder being mounted for rotation on the end of a support rod stuck into the ground. Wind on the rudder and fins causes the tube to tilt and turn into the wind with the open end facing the rain.
- UP** - 2000-08

Search statement 4

Query/Command : prt set max

1 / 5 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042770952613
PN -  US5323317 A 19940621 [US5323317]
TI - Method and apparatus for determining runoff using remote geographic sensing
PA - HAMPTON TERRY L
 METTEL M CARSON
IN - HAMPTON TERRY L; METTEL M CARSON
AP - 1991US-0664564 19910305
PR - 1991US-0664564 19910305
IC - G01V-001/00
EC - B64G-001/66
 G01S-013/86
 G01S-013/89
 G01S-013/95C
PCL - ORIGINAL (O) : 702003000
CT - (US5323317)
 US3598980; US4227211; US4908763; JP63-238591
 Water Resources Bulletin, American Water Resources Association, Dec., 1986,
 Draper et al., vol. 26 No. 6.

 IEE Transactions on Geoscience and Remote Sensing, vol. GE-22, No. 6, Nov.
 1984.

 Water Resources Bulletin, American Water Resources Association, Feb. 1990,
 vol. 1, Rango et al.


 P. A. DeBarry et al., "Computer Watersheds", Civil Engineering, vol. 60, No. 7,
 pp. 67-70 (Jul. 1990).

 W. Skipwith et al., "Closing the Floodgates", Civil Engineering, vol. 60, No. 7,
 pp. 54, 55 (Jul. 1990).
AB - (US5323317)
 Images of a selected geographic region are obtained using remote sensing
 apparatus and are processed to determine characteristic spectral reflectance
 patterns associated with different ground covers and soil types in the region. The
 image processing means compares the spectral reflectance patterns to image
 pixel values in order to classify each pixel in a ground cover or soil type class,
 the corresponding spectral reflectance pattern for which matches the pixel value.
 In a preferred embodiment of the invention, Geographic Information System
 (GIS) software is utilized to combine a remotely sensed image providing ground
 cover classifications for a geographic region with a remotely sensed image
 providing soil type classifications for the same region in order to generate a
 rainfall loss function. The rainfall loss function can then be used to determine a
 runoff curve number (RCN) for the region, to determine probable maximum
 flood (PMF), or to generate various design flood hydrographs corresponding to
 different precipitation events using a computer water shed model.

UP - 2000-08

2 / 5 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042762141579

PN -  US4908763 A 19900313 [US4908763]

TI - Spectral data processing method for detection of hydrocarbons

PA - PHILLIPS PETROLEUM CO

PA0 - Phillips Petroleum Company, Bartlesville OK [US]

IN - SUNDBERG KENNETH R

AP - 1988US-0242942 19880909

PR - 1988US-0242942 19880909

IC - G01V-005/00 G01V-005/02

EC - G01V-008/02

PCL - ORIGINAL (O) : 702013000; CROSS-REFERENCE (X) : 250253000

CT - (US4908763)
US4678911

Thiessen, R. L. et al., "Surface Reflectance Correction and Stereo Enhancement of Landsat Thematic Mapper Imagery for Structural Geologic Expoloration", Thematic conference on Remote Sensing for Exploration Geology, Reno, NV, Sep. 29, 1986, published in report number PNL-SA-13832, Nov. 1986, p. 12.

Everett, J. R. et al., "Evaluation of Thematic Mapper Performance as Applied to Hydrocarbon Exploration", NASA Conference Publication 2355, NASA Scientific & Technical Information Branch, Washington, DC, 1985, 119-IV, p. 125.

Hurtak, J. et al., "Strategies for Radar Penetration of Oil Shale and Tar Sands for New Energy Sources", Miami Internatinal Conference on Alternative Energy Sources, Miami, FL, Dec. 9, 1985, published by Hemisphere Publishing, New York, Report No. CONF-851201, 3-26.

Collins, W. et al., "High Spectral Resolution of Imaging Systems for 1984", Proceedings of the International Symposium on Remote Sensing of Environment, Third Thematic Conference: Remote Sensing for Exploration Geology, Colorado Springs, CO, Apr. 16, 1984, published by Environmental Research Institute of Michigan, Ann Arbor, MI, Report No. CONF-840432, 1984, 293-4.

SAS.RTM. User's Guide: Statistics, Version 5 Edition, Cary, NC, SAS Institute, Inc., 1985, pp. 317-333 and 377-400.

DeGroot, M. H., i Probability and Statistics, Reading, Mass., Addison-Wesley Publishing Company, 1975, pp. 172, 173, 456-463, 530-532.

Snedecor, G. W. and W. A. Cochran, Statistical Methods, Ames, Iowa, Iowa University Press, 1967, pp. 215-220.

AB - (US4908763)


A method of processing spectral data for the earth's surface is provided which

effectively identifies areas having a high probability of containing hydrocarbons. The method involves processing of intensity values for various wavebands of radiation reflected from areas of the earth's surface which correspond to image elements called pixels. The intensity values are employed in conjunction with predetermined hydrocarbon productivity data (i.e. drilled productive, dry holes) to derive discriminant probability functions whose values for various pixels are indicative of the presence of hydrocarbons in those pixels.

UP - 2000-08

3 / 5 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042760958733

PN -  JP63238591 A 19881004 [JP63238591]

TI - CALCULATION SYSTEM FOR PREDICTING RUN-OFF

PA - TOKYO SHIBAURA ELECTRIC CO

PA0 - (A) TOSHIBA CORP

IN - MUNEMOTO MASARU

AP - 1987JP-0071660 19870327

PR - 1987JP-0071660 19870327

IC - G01W-001/10 G06F-015/32

AB - (JP63238591)

PURPOSE: To determine the run-off of a river basin with respect to rainfall, the peak amt. of the run-off and the run-off time with high accuracy by using two storage function chambers and discretely executing the calculations for tracing the out-flow in the two basins; run-off basin and infiltration area.


CONSTITUTION: The data on the actually measured rainfall-run-off of the river basin is inputted and are stored in rainfall depth and run-off files 3, 4 in a step 201. Delay time is determined in a step 202 and the calculation of function equations is executed to determine the calculated run-off value and the actually measured run-off value in a step 203. Run-off characteristics are graphed and are approximated by the two storage function equations in a step 204. Tentative calculations are made by the function equations obtd. in a step 205 to calculate the primary run-off rate and satd. rain depth of the basin. Inputting of prediction data is executed from the rain depth file 3 in a step 301. The run-off of the basin with respect to the rain depth data of the file 3 is calculated by using the function equations and constants selected in the step 302, in a step 303. The peak quantity of the run-off and the run-off time are determined in a step 305.

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UP - 2000-08

4 / 5 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042741491252

PN -  US4227211 A 19801007 [US4227211]


TI - Method for analyzing seasonal growing conditions of crops

PA - COLUMBIA PHOTOGRAFIX INC

PA0 - Columbia Photografix, Inc., Pasco WA [US]

IN - DISBROW LYNNFORD E
AP - 1978US-0944702 19780922
PR - 1978US-0944702 19780922
EC - G01C-011/00
PCL - ORIGINAL (O) : 348164000; CROSS-REFERENCE (X) : 250340000
 348144000 382165000
CT - (US4227211)
 US3748471; US3752914; US3752915; US3978324; US4037048
AB - (US4227211)
 This method uses electronic measurement of color values in aerial infrared photographic transparencies to analyze the growing condition of a crop. A series of infrared photographs are taken during the growing season, and average color values from the resulting image are plotted and compared to optimum growing conditions. Electronic measurements are made of color densities about the total field area as represented on each photographic image. Each measurement is corrected to eliminate exposure variations in the images due to photographic factors, weather factors, lighting and film conditions, and the date and time at which the photograph was taken.
UP - 2000-08



5 / 5 FAMPAT - ©QUESTEL-ORBIT

FAN - 20042722904930
PN -  US3598980 A 19710810 [US3598980]
TI - METHOD OF AND APPARATUS FOR DETERMINING AREA GRAVITY
PA - MOBIL OIL CORP
PA0 - Mobil Oil Corporation
IN - LAWRENCE PHILIP L; EHLERT GILBERT W; LESTER JOHN A;
 MUSGRAVE ALBERT W
AP - US3598980D 19690922
FD - (US3598980)
 Cont. of US330413 19631213 [1963US-0330413] (Abandoned)
PR - 1969US-0860117 19690922
IC - G01V-007/06 G06F-015/34 G06G-007/18
EC - G01V-007/06
PCL - ORIGINAL (O) : 702017000; CROSS-REFERENCE (X) : 708805000
CT - (US3598980)
 US2801794; US2959351; US3112397; US3256480; US3284763; US3319226
AB - (US3598980)
 Gravity profiles are smoothed by differing smoothing intervals. Several of the smoothed profiles are then combined, or averaged, to form an averaged area gravity value. The averaged area gravity values are subtracted one from another to generate a plurality of difference area gravity values. Each of these difference area gravity values accentuates an anomaly in a different depth range.
UP - 2000-08

Query/Command : prt set max

1 / 16 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20050970048248

PN -  US2005071054 A1 20050331 [US20050071054]
 US6983198 B2 20060103 [US6983198]

TI - Onboard satellite processing to mitigate data recorder limits

PA - Harris Corporation
HARRIS CORP

PA0 - Harris Corporation, Melbourne FL [US]

IN - WEINER ALLAN M

AP - 2003US-0672583 20030926

FD - (US20050071054)
Previous Publication: US20050071054 A1 20050331

PR - 2003US-0672583 20030926

IC - G06F-017/00

PCL - ORIGINAL (O) : 701013000; CROSS-REFERENCE (X) : 244158000R
342026000A 342060000 348144000 702003000 702005000



CT - (US20050071054)
Cited; US5248979; US5323317; US5329595; US5596494; US5612901; Cited;
US4465940

AB - (US20050071054)
A spacecraft (102) can include a communications receiver (210) for receiving a selected list of targets (114, 116) for which desired information is to be acquired by the spacecraft (102). In addition to location data concerning the targets, the list can also include a predetermined priority value assigned to each target on the list. The list can include data acquisition targets that collectively comprise more data than can be stored on the spacecraft's onboard solid state recorder (204). One or more computer processors (206) can be also be provided onboard the spacecraft. The processor (206) can process the acquired data onboard the spacecraft to determine whether the data contains at least a predetermined portion of the desired information and can overwrite lesser priority data (316) when the solid state recorder (204) is otherwise full.

UP - 2005-13

2 / 16 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042802857072

PN -  US2004138815 A1 20040715 [US20040138815]
 US6889141 B2 20050503 [US6889141]

TI - Method and system to flexibly calculate hydraulics and hydrology of watersheds automatically



IN - LI WEIMIN; GAO QIAN

AP - 2003US-0338995 20030110

FD - (US20040138815)
Previous Publication: US20040138815 A1 20040715







- PR** - 2003US-0338995 20030110
- IC** - G01V-003/00
- EC** - E03B-001/00
- PCL** - ORIGINAL (O) : 702002000; CROSS-REFERENCE (X) : 405036000
- CT** - (US20040138815)
Cited; US5323317; US5342144
Cited by applicant
Olivera et al., System of GIS-Based Hydrologic and Hydraulic Applications for Highway Engineering: Summary Report, Oct. 1999, Bureau of Engineering Research: The University of Texas at Austin.*
- Maidment et al., GIS for Floodplain Mapping in Design of Highway Drainage Facilities, Aug. 1998, Bureau of Engineering Research: The University of Texas at Austin.*
- Tate, Floodplain Mapping and terrain Modeling Using HEC-RAS and ArcView GIS, Apr. 1999, Center for Research in Water Resources.*
- Cited by examiner
State Standard for Floodplain Hydraulic Modeling, Jul. 2002, Arizona Department of Water Resources Dam Safety Section.
- AB** - (US20040138815)
A method and system for calculating hydraulics and hydrology of watersheds automatically with flexibility. It combines the concepts of hydraulics and hydrology with the flexibility of spreadsheets and the automation of the accompanied standalone computer modules created in this new system. Each standalone module functions as a control center to communicate with other application programs like EXCEL and process the input data, to perform the calculation internally and place results in a popularly adopted format like spreadsheet. One control center relays information to others through linking the input and output data sources. A seamless stream of calculation can be formed flexibly by repeating the above linking procedure. This optimized calculation stream and the new computer functions created in them have eliminated many tedious and labor-intensive tasks. The modules are self-contained, which means easy maintenance and error proof compared with the scripts if any embedded in spreadsheets.
- UP** - 2004-29

3 / 16 FAMPAT - ©QUESTEL-ORBIT - image

- FAN** - 20042801513598
- PN** -  US2003018432 A1 20030123 [US20030018432]
 US6522972 B2 20030218 [US6522972]
- TI** - Method for determining an instantaneous unit hydrograph
- IN** - HELMS PRESTON W
- AP** - 2001US-0907973 20010718
- PR** - 2001US-0907973 20010718
- IC** - G06F-169/00

- EC** - E03F-001/00
- PCL** - ORIGINAL (O) : 702003000; CROSS-REFERENCE (X) : 405039000
- CT** - (US20030018432)
 US4153881; US4987913; US5279151; US5323317; US5440483; US5521813;
 US6061013
 Quantitative Analysis of Watershed Geomorphology, by Arthur Strahler, from
 American Geophysical Union Transcripts 38 (6): 913-920 (1957).
- Unit Hydrograph Derivation for Ungauged Watersheds by Stream Order Laws,
 by Ben Chie Yen, and Kwan Tun Lee, Journal of Hydrologic Engineering, Jan.
 1997.
- Geomorphology and Kinematic Wave Based Hydrograph Derivation, by Swan
 Tun Lee and Ben Chie Yen, Journal of Hydraulic Engineering, Jan. 1997.
- The Geomorphologic Structure of Hydrologic Response, by Ignacio Rodriguez-
 Iturbe and Juan B Valdes, Walter Resources Research, Dec. 1979.
- Nash Model Relation to Horton Order Ratios, by Renzo Rosso, Water
 Resources Research, vol. 20, No. 7, Jul. 1984.
- A Review of the Search for a Quantitative Link Between Hydrologic Response
 and Fluvial Geomorphology, by Raphael L. Bras and Ignacio Rodriguez-Iturbe,
 New Directions for Surface Water Modeling (Proceedings of the Baltimore
 Symposium, May 1989).
- AB** - (US20030018432)
 A method for producing a more accurate instantaneous unit hydrograph
 particularly for urban areas and for use in specifying the capacities of structures
 engineered to manage surface water runoff at the watershed catchment. The
 method uses map data verified by on-site inspections to obtain the input for the
 computer-performed calculation of initial probabilities, transition probabilities
 and mean waiting times, and subsequently the instantaneous unit hydrograph.
 This data includes the areas, links between streams, and slopes of various parts of
 the watershed.
- UP** - 2003-06

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- FAN** - 20042800613388
- PN** -  CA2419272 A1 20020228 [CA2419272]
 WO200217540 A2 20020228 [WO200217540]
 AU8833401 A 20020304 [AU200188334]
 WO200217540 A3 20020613 [WO200217540]
 US2002103688 A1 20020801 [US20020103688]
 EP1323099 A2 20030702 [EP1323099]
 BR0113436 A 20041207 [BR200113436]
 US6990459 B2 20060124 [US6990459]
- TI** - SYSTEM AND METHOD FOR DEVELOPING A FARM MANAGEMENT
 PLAN FOR PRODUCTION AGRICULTURE

PA - Deere & Company
 DEERE & CO
 SCHNEIDER GARY M

PA0 - Schneider, Gary M.; 4528 Otter Road; Masonville, Colorado 80541 (US)

IN - SCHNEIDER GARY M

AP - 2001BR-0013436 20010821; 2001CA-2419272 20010821; 2001EP-0968056
 20010821; 2001US-0934257 20010821
 2001AU-0088334 20010821; 2001WO-US26051 20010821

FD - (US20020103688)
 Prov. AP US60226857 20000822 [2000US-P226857]
 Rel. Prov. 60/228,857 20000822 [2000US-P228857]
 Previous Publication: US20020103688 A1 20020801

PR - 2000US-P226857 20000822; 2001US-0934257 20010821; 2001WO-US26051
 20010821

IC - G06F-017/60

EC - A01B-079/00

PCL - ORIGINAL (O) : 705008000; CROSS-REFERENCE (X) : 705007000

DS - (EP1323099)
 AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
 AL LT LV MK RO SI

DS - (WO200217540)
 AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ
 DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE
 KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ
 NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ
 VN YU ZA ZW European patent (AT BE CH CY DE DK ES FI FR GB GR IE
 IT LU MC NL PT SE TR) OAPI patent (BF BJ CF CG CI CM GA GN GQ GW
 ML MR NE SN TD TG) ARIPO patent (GH GM KE LS MW MZ SD SL SZ TZ
 UG ZW) Eurasian patent (AM AZ BY KG KZ MD RU TJ TM)

CT - (EP1323099)
 Cited in the search report
 See references of WO 0217540A2

CT - (US20020103688)
 Cited; US5467271; US5771169; US5897619; US6058351; US6141614;
 US6327569; US6505146; US20020023052; US20030036852; JP411134398;
 Cited; US3978324; US4015366; US4016542; US4176395; US4209131;
 US4244022; USRE31023; US4420682; US4430828; US4463706; US4493290;
 US4617876; US4626984; US4630773; US4722054; US4745550; US4755942;
 US4760547; US4876643; US4931932; US4949248; US4992940; US4992942;
 US4996645; US5107443; US5023787; US5063505; US5124909; US5136501;
 US5173079; US5173855; US5220876; US5246164; US5287453; US5297195;
 US5299207; US5323317; US5327708; US5355815; US5379057; US5453924;
 USRE35100; US5566069; US5689418; US5699244; US5701400; US5721679;
 US5751576; US5752023; US5757640; US5851999; US5859972; US5867494;
 US5867495; US5873071; US5884224; US5884225; US5884226; EP0203662;
 EP0460869; WO9858476
 Cited by examiner
 Batte, M.T., Factors Influencing the Profitability of Precision Farming Systems,

First Quarter 2000, Journal of Soil and Water Conservation, pp. 12-18, [PROQUEST].

Wilcox, J., Accounting on it (Use of Accounting Software in Managing Farms), Dec. 1997, Successful Farming, vol. 95 Issue 12, start p. 25, [DIALOG: File 47].

Mangold, Grant, Farming with Precision, Dec. 1996, Successful Farming, vol. 94 Issue 12, start p. 40, [DIALOG: File 47].

Cited by applicant

A General Purpose Tractor Instrumentation and Data Logging System (1993).

A Simple and Inexpensive System for Collection of Data at Remote Locations (1991).

AGRIS Precisions Agriculture Products Advertisement (copyright 1995, 1996).

An Investigation and Development of the Use if Hand Held Data Loggers in the Field (1985).

Automatic Collection of Data on Practical Use of Field Machines (1984).

Deere BLAST Polling System Literature (1991).

Easing into Square-Foot Farming, Farm Industry News, (Jul./Aug. 1994).

Economical, Automated Data Collection, Storage and Transfer (1986).

Extending AgObjects with OLE Automation, (revised Oct. 1, 1996).

Farmers Go for Precision Crop Management, Ag Retailer, (Nov. 1995).

FINFO: A Field and Farm Technical Information Management Program (1992).

Harvesting Information, The Rural Voice (Mar. 1994).

John Deere Information Systems advertisement (no date).

Land-Use Mapping by Digital Processing of Space Images, Gocczan et al., Foldrajzi Ertesito, vol. 32(3-4), pp. 319-323 (1983) (Abstract in English).

Mid-Tech advertisements.

Mosaic with a Meaning, Top Producers, (Dec. 1993).

Network Planning Tools and Activities in Italy, Damosso et al., 11312 MRC Mobile Radio Conference, Nov. 13-15, 1991, Nice, France, pp. 137-144.

Notes: Data Collection Software for the Poison Organiser II (1992).

Pushing for Better Crop Data, Indiana Prairie Farmer, Aug. 18, 1984.

Software Scene Portable and Desktop Computer Integrated Field Book and Data Collection System for Agronomists (1992).

The Development of a Computerized Harvest Data Collection and Organising System (1985).

Yield Monitoring Experiences (1994).

Applications Mapping Inc., "An Introduction to Appli-Map".

Ag Decisions Agricultural Software, "Decision Support Software for Farm Management User Guide"(()1997).

Agris Corporation, "AgLink for Windows (Registered Trademark) Users Manual".

Vantage Point Networks, "New Online Service Plans to Leverage Internet for Farmer Success" (Press Release, Jan. 29, 1999).


John Deere Precision Farming, "GreenStar (Registered Trademark) Combine Yield Monitor System and Yield Mapping System, Operator's Manual".

Greenstar (Registered Trademark) , John Deere Precision Farming Systems, "John Deere Yield Mapping System, JDmap Version 2.1, User's Guide" (() 1997).

- CT** - (WO200217540)
Cited in the search report
US5897619(A)(Cat. X);US5467271(A)(Cat. Y)
BATTE M.T.: 'Factors influencing the profitability of precision farming systems'
JOURNAL OF SOIL AND WATER CONSERVATION vol. 55, no. 1, 2000,
pages 12 - 18, XP002907283(Cat. Y)
- AB** - (US20020103688)
A system comprised of hardware, software and business processes for developing an optimal custom farm management plan, and in particular, a single year or multi-year crop selection, acreage allocation, and resource management strategies for production agriculture. The method uses mathematical programming and sensitivity analysis to help the user determine optimal allocations of controllable resources such as land, capital, labor, water, machinery, and chemicals in the context of farm management objectives. The system allows the import of data and information relating to the farm and data and information from third party industry professionals and sources, thereby providing for a complete analysis based on these parameters.
- UP** - 2002-27





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FAN - 20042800546247

PN -  US6571242 B1 20030527 [US6571242]

TI - Methods and systems for updating a land use and land cover map using postal records
PA - VERIZON LAB INC
PA0 - Verizon Laboratories Inc., Waltham MA [US]
IN - HECKMAN NORMAN EUGENE; CHENG BEATO T; HAO JIANXIU
AP - 2000US-0624728 20000725
PR - 2000US-0624728 20000725
IC - G06F-017/30
EC - G01C-015/00
PCL - ORIGINAL (O) : 707006000; CROSS-REFERENCE (X) : 379220010
 707005000 707104100
CT - (US6571242)
 US4757267; US5323317; US5719949; US5870741; US5901214; US6064337;
 US6125367; US6304684
AB - (US6571242)
 Systems and methods are presented to classify a region on a map, or to update a
 preexisting classification of the region. The method utilizes postal records,
 associated with geographic positions, and corresponding land classifications to
 classify the region or to update the preexisting classification.
UP - 2003-23

6 / 16 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042792274665
PN -  WO200104627 A1 20010118 [WO200104627]
 AU5849000 A 20010130 [AU200058490]
 EP1203955 A1 20020508 [EP1203955]
 EP1203955 A4 20030702 [EP1203955]
 US6937939 B1 20050830 [US6937939]
TI - SOIL MEASURING INSTRUMENT, SOIL MEASUREMENT ASSISTING
 DEVICE AND METHOD, RECORDED MEDIUM ON WHICH PROGRAM IS
 RECORDED, RECORDED MEDIUM ON WHICH DATA IS RECORDED,
 APPLICATION AMOUNT CONTROLLER, APPLICATION AMOUNT
 DETERMINING DEVICE, METHOD FOR THEM, AND FARM WORKING
 DETERMINATION ASSISTING SYSTEM
PA - HIRAKO SHINICHI
 HISANO ATSUSHI
 OMRON TATEISI ELECTRONICS CO
 SHIBUSAWA SAKAE
 TAKENOBU TORU
 UNIV TOKYO AGRICULTURE
 YAMAZAKI KIZO
PA0 - Tokyo University of Agriculture and Technology TLO Company, Ltd., [JP]
IN - TAKENOBU TORU; YAMAZAKI KIZO; HIRAKO SHINICHI; HISANO
 ATSUSHI; SHIBUSAWA SAKAE
AP - 2000EP-0944296 20000706; 2000AU-0058490 20000706; 2000WO-JP04503
 20000706; 2002US-0030402 20020520

FD - (US6937939)
PCT/JP00/04503 20000706 [2000WO-JP04503]
WO01/04627 20010118 [WO200104627]

PR - 1999JP-0195139 19990708; 2000JP-0070158 20000314; 2000WO-JP04503
20000706

IC - G01N-033/24

EC - G01N-021/31D
G01N-021/35D

PCL - ORIGINAL (O) : 702022000; CROSS-REFERENCE (X) : 250255000
356303000 356326000 356336000 356337000 702002000

DS - (EP1203955)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL
AL LT LV MK RO SI

DS - (WO200104627)
AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE
DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ
PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU
ZA ZW ARIPO Patent (GH GM KE LS MW MZ SD SL SZ TZ UG ZW)
Eurasian Patent (AM AZ BY KG KZ MD RU TJ TM) European Patent (AT BE
CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE) OAPI Patent (BF BJ
CF CG CI CM GA GN GW ML MR NE SN TD TG)

CT - (EP1203955)
Cited in the search report
EP615682(A1)(Cat. X);DE19744973(A1)(Cat. X);US5621669(A)(Cat.
X);US5323317(A)(Cat. X);EP635960(A1)(Cat. Y);EP576121(A1)(Cat.
Y);SU1035516(A1)(Cat. X); WO9821930(A1)(Cat. X);GB2305045(A)(Cat. Y)
AUERNHAMMER H ET AL: "GPS FOR YIELD MAPPING ON COMBINES"
COMPUTERS AND ELECTRONICS IN AGRICULTURE, AMSTERDAM,
NL, vol. 11, 1994, pages 53-68, XP002059528(Cat. A)
REITZ P ET AL: "INVESTIGATIONS ON A PARTICULAR YIELD
MAPPING SYSTEM FOR COMBINE HARVESTERS" COMPUTERS AND
ELECTRONICS IN AGRICULTURE, AMSTERDAM, NL, vol. 14, no. 2/3, 1
February 1996 (1996-02-01), pages 137-150, XP002059527(Cat. A)
See also references of WO 0104627A1

CT - (US6937939)
Cited; US5044756; US5316950; US5355815; US5461229; US5467271;
US5668719; US5673637; US5712782; US5743343; US5884224; US5887491;
US6016713; US6035950; US6041582; US6044324; US6070539; US6138590;
US6236907; US6324922; US6484652; US6570999; US6597992; US6606542;
US6608672; US6853937; Cited; US5323317; US5621669; DE19744973;
EP0576121; EP0615682; EP0635960; GB2305045; JP51-132887; JP11-83627;
JP11-313594; RU1035516; WO9821930
Cited by examiner
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Soils Under Varying Moisture Conditions", IEEE, 1994.

Cited by applicant
European Search Report dated May 19, 2003, 7 pages.

English Language Abstract for Russian 1035516-A, 2 pages.

European Search Report dated Feb. 11, 2003, 4 pages.

P. Reitz et al., "Investigations on A Particular Yield Mapping System for Combine Harvesters", Computers and Electronics in Agriculture, Amsterdam, NL, vol. 14, No. 2/3, Feb. 1, 1996, pp. 137-150, XP002059527.

H. Auernhammer et al., "GPS for Yield Mapping on Combines", Computers and Electronics in Agriculture, Amsterdam, NL, vol. 11, 1994, pp. 53-68, XP002059528.


Japanese Patent Abstract; Publication No. 11-083627; Published on Mar. 26, 1999.

Japanese Patent Abstract; Publication No. 11-313594; Published on Nov. 16, 1999.

- CT** - (WO200104627)
Cited in the search report
JP11083627(A)(Cat. Y);JP51132887(A)(Cat. Y)
See also references of EP 1203955A1
- AB** - (EP1203955)
A model for determining the type of soil, the water content of a soil, and the soil properties, and a soil measurement data storage portion (60) to store therein measurement data necessary to carry out the model and correlated with specific measurement conditions are provided. The water content is measured by a water content measuring portion (57) on the basis of the measurement data fed from a soil sensor (S). The type of soil is determined by a feature extracting portion (56) and a type-of-soil determining portion (58), and the determined type of soil is sent to a determining portion (59). The determining portion (59) determines corresponding conditions and a model according to the type of soil and water content of the measured place received and sets them in a predetermined processing portion.+DBPH+ The soil sensor feeds measurement data meeting the measurement conditions to a measurement information processing portion (55), and the processing portion (55) determines the soil properties according to the determined model. <IMAGE>
- UP** - 2001-04

7 / 16 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042791930758

PN -  US6119069 A 20000912 [US6119069]

TI - System and method for deriving field boundaries using alpha shapes

PA - CASE CORP

PA0 - Case Corporation, Racine WI [US]

IN - MCCAULEY JAMES DARRELL

AP - 1999US-0258962 19990301

PR - 1999US-0258962 19990301
IC - G06F-019/00
EC - G06K-009/48
PCL - ORIGINAL (O) : 702005000
CT - (US6119069)
US4814711; US4815012; US5214757; US5265024; US5323317; US5334987;
US5418906; US5467271; US5471392; US5528518; US5544052; US5561747;
US5771169
Edelsbrunner, Herbert, "Weighted Alpha Shapes", Technical Report UIUCDCS-R-92-1760, Dept. of Comp. Sci., Univ. of Ill. at Urbana-Champaign, Urbana, Ill. (1992), p. 1-15.

Edelsbrunner, Herbert et al., "On the Shape of a Set of Points in the Plane", IEEE Transactions on Information Theory, vol. IT-29, No. 4, Jul. 1983, pp. 551-559.

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Gibbs, Betty L., Technical Articles, Mineral Industry Software, Mining Annual Review, Jul., 1993, p. 57.



Hall, Valerie, "Morphing in 2-D and 3-D; includes related articles on morphing in films, on Rmorf shareware morphing software and on two-pass mesh warping algorithm", Dr. Dobb's Journal of Software Tools, Jul. 1993, vol. 18, No. 7, p. 18.

Mehlhorn, Kurt et al., "LEDA: a platform for combinatorial and geometric computing; Library of Efficient Data Types and Algorithms", Communications of the ACM, Jan. 1995, vol. 38, No. 1, p. 96.

Cressie, Noel A. C., "Statistics for Spatial Data", The Many Faces of Spatial Prediction, pp. 372-375.

- AB** - (US6119069)
A system and method for determining the boundaries of a field is disclosed. The system and method utilizes computational geometry and, in particular, the alpha shape of the field to derive the field boundary of a set of georeferenced data points. The method includes collecting georeferenced data for the field, assigning the georeferenced data to a data set, filtering the data to remove anomalous data points, filtering the data to remove known inside points, scaling the point coordinates from decimal to integer form, determining the alpha shape of the set, buffering the alpha shape to compensate for antenna position, and outputting the field boundary.
- UP** - 2000-35

8 / 16 FAMPAT - ©QUESTEL-ORBIT







- FAN** - 20042791633880
- PN** -  FR2785425 A1 20000505 [FR2785425]
 FR2785425 B1 20010105 [FR2785425]
- TI** - Automatic management of terrain for slurry management in waste water purification plants
- PA** - SUEZ LYONNAISE DES EAUX
- PA0** - SUEZ-LYONNAISE DES EAUX; 72 AVENUE DE LA LIBERTE 92753 NANTERRE CEDEX
- IN** - GUYOMARD OLIVIER
- AP** - 1998FR-0013744 19981102
- PR** - 1998FR-0013744 19981102
- IC** - G06T-001/00
- EC** - G06Q-010/00C
G06T-017/50
- CT** - (FR2785425)
Cited in the search report
US5323317(A)(Cat. A);GB2259591(A)(Cat. A);US5652717(A)(Cat. A);WO9215080(A)(Cat. A);EP619554(A)(Cat. A)
BOXALL S.R.: "Coastal zone management-technologies, methodologies and solutions" IEE COLLOQUIUM ON POLLUTION OF LAND, SEA AIR: AN OVERVIEW FOR ENGINEERS (DIGEST NO.1995/165),10 octobre 1995 (1995-10-10), pages 7/1-7/5, XP002108977 London, UK(Cat. A)
HAU K.C., SCULLI D.: "Costs of disposal of sewage sludge: a case study" ENGINEERING COSTS AND PRODUCTION ECONOMICS,mai 1991 (1991-05), pages 133-141, XP002108978(Cat. A)
SATOSHI SUZUKI ET AL: "MARIS: MAP RECOGNITION INPUT SYSTEM" PATTERN RECOGNITION, vol. 23, no. 8, 1 janvier 1990 (1990-01-01), pages 919-933, XP000107916 ISSN: 0031-3203(Cat. A)
- AB** - (FR2785425)
The automatic management commences with a digital map built from satellite data, identifies the nature and use of zones on the map, and digitizes the contours of appropriate areas on the map. This data is transformed to binary images which are superposed to provide a geographic representation that is suitable for

automatic analysis to determine use of a site for waste spreading.

UP - 2000-44

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FAN - 20042791525960

PN -  CA2277713 A1 20000323 [CA2277713]
 EP0989353 A2 20000329 [EP-989353]
 WO200018124 A1 20000330 [WO200018124]
 AU6051699 A 20000410 [AU9960516]
 GB0109161 D0 20010530 [GB200109161]
 US6243483 B1 20010605 [US6243483]
 EP0989353 A3 20010816 [EP-989353]
 GB2365641 A 20020220 [GB2365641]
 MXPA01003044 A 20030714 [MXPA01003044]
 GB2365641 B 20040114 [GB2365641]

TI - Mapping system for the integration and graphical display of pipeline information that enables automated pipeline surveillance

PA - PII NORTH AMERICA INC
 PIPELINE INTEGRITY INT LTD

PA0 - PII North America, Inc., Houston TX [US]

IN - FRASER ANDY J; TUCK ALAN; HEWITT BRIAN; PETROU MARIA

AP - 1998US-0159381 19980923; 1999CA-2277713 19990712; 1999EP-0306066
 19990730; 2001GB-0009161 19990922
 1999AU-0060516 19990922; 1999WO-US21715 19990922; 2001MX-PA03044
 20010323

PR - 1998US-0159381 19980923; 1999WO-US21715 19990922

IC - F17D-005/00

EC - F17D-005/00

PCL - ORIGINAL (O) : 382103000; CROSS-REFERENCE (X) : 348144000

DS - (EP-989353)
 AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
 AL LT LV MK RO SI

DS - (WO200018124)
 AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM
 EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC
 LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE
 SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW ARIPO Patent (GH
 GM KE LS MW SD SL SZ TZ UG ZW) Eurasian Patent (AM AZ BY KG KZ
 MD RU TJ TM) European Patent (AT BE CH CY DE DK ES FI FR GB GR IE
 IT LU MC NL PT SE) OAPI Patent (BF BJ CF CG CI CM GA GN GW ML MR
 NE SN TD TG)

CT - (EP-989353)
 Cited in the search report
 WO9932902(A2)(Cat. A,P,D);EP313101(A2)(Cat. A);JP10221447(A)(Cat.
 A);EP855595(A2)(Cat. A);US5414462(A)(Cat. A);EP683401(A2)(Cat. A)
 TURNER W J: "MODELS TRACK, PREDICT AUSTRALIAN SYSTEM

OPERATIONS" OIL AND GAS JOURNAL,US,PENNWELL PUBLISHING
CO. TULSA, vol. 91, no. 25, 21 June 1993 (1993-06-21), pages 80,81-84,
XP000377798 ISSN: 0030-1388(Cat. A)
Cited by applicant
US8996504(A)

CT -

(US6243483)
US3238448; US3769711; US4298280; US4491018; US4524526; US4609869;
US4799391; US4825711; US4945775; US4970682; US5166789; US5247356;
US5323317; US5329595; US5331578; US5414462; US5565633; US5596494;
US5631970; US5659142; US5719949; US5731997; US5739420; US5742053;
US5752513; US5848373; US5870314; US5878356; US5883584; US5999211;
US5999662
Soreide et al. ("Information Processing in Marine Archaeology") IEEE 1996, pp.
680-687.*

Sury et al. ("Contribution of Satellite Data to Meteo-Oceanic Site
Characterization: A case Study"), IEEE 1994, pp. I-515-I-521.*

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The Institute of Petroleum, Petroleum Review Apr. 1987, pp. 17, 19, 21, 22.

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Nov. 1989, p. 557.

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Mechanical Engineers, A Review of In-Line Inspection Capabilities, J.F. Kiefner,
et al., pp. 29-40.

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Overseas No. 39 (1983), pp. 113-119.

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May 7, 1990.

Three Good Reasons Why FLAWSONIC Should be Your Pipeline Wall-
Thickness Measurement Service; TDW Pipeline Surveys, vol. 88, Sep. 3, 1990.

Defect Location and Sizing in a Transmission Pipeline is No Easy Task, vol. 88,
Aug. 20, 1990.

Pipeline Geometry Pigging: Application of Strapdown Ins, Todd R. Porter et al.,
1990 IEEE, pp. 353-358.

British Gas Has Seamless Pipe Inspection Program, Lawrence Jackson et al.,
Technology, Sep. 9, 1987, Oil & Gas Journal, pp. 147-148, 150, 152, 155-156.



Canadian Operator Details Internal Inspection Program, Gary C. Robinson,
Technology, Jun. 3, 1985, Oil & Gas Journal, pp. 55-59.

On-Line Measurement of the Microstructure and Mechanical Properties of Steel,
J.F. Busiere, Materials Evaluation/44/Apr. 1986, pp. 560-567.

PCT/ISA/210 International Search Report, second sheet & continuation of
second sheet, Jun. 17, 1999.





- CT** - (WO200018124)
Cited in the search report
US5166789(A)(Cat. Y);US4970682(A)(Cat. Y);US5742053(A)(Cat. Y);US5739420(A)(Cat. A);US4298280(A)(Cat. A)
- CT** - (GB200109161)
Cited in the search report
US4298280(A);US4970682(A);US5166789(A);US5739420(A);US5742053(A)
- AB** - (EP-989353)
Pipeline data and satellite data are used to provide surveillance for a pipeline. The satellite data is integrated with the pipeline data to produce a current pipeline map. The current pipeline map is then compared with a previous pipeline map to determine whether the route of the pipeline or a surrounding environment of the pipeline has changed. The satellite data includes very high resolution (VHR) satellite imagery and the pipeline data includes location data that is a series of global positioning system (GPS) coordinates. <IMAGE>
- UP** - 2001-25

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- FAN** - 20042790802920
- PN** - IL122389 D0 19980615 [IL-122389]
 WO9927768 A1 19990610 [WO9927768]
 AU1445399 A 19990616 [AU9914453]
- TI** - A GROUND TRUTH MONITORING SYSTEM
- PA** - ENDE MICHAEL
 TRIBELSKI ZAMIR
 TRIBELSKY ZAMIR
 ZAMIR TRIBELSKI
- PA0** - TRIBELSKI, Zamir ; Derech Haachayot 9 Ein Karem 95744 Jerusalem (IL)
- IN** - TRIBELSKI ZAMIR
- AP** - 1997IL-0122389 19971201; 1999AU-0014453 19981201; 1998WO-IL00588 19981201
- PR** - 1997IL-0122389 19971201; 1998WO-IL00588 19981201
- IC** - A01G-007/00
- EC** - A01G-007/00
- DS** -
 (WO9927768)
 AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI
 GB GD GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT
 LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL
 TJ TM TR TT UA UG US UZ VN YU ZW ARIPO Patent (GH GM KE LS MW
 SD SZ UG ZW) Eurasian Patent (AM AZ BY KG KZ MD RU TJ TM) European

- Patent (AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE)
OAPI Patent (BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG)
- CT** - (WO9927768)
Cited in the search report
US3703133(A)(Cat. X);US5585626(A)(Cat. Y);US5208855(A)(Cat. Y);EP627243(A1)(Cat. Y);US5689418(A)(Cat. Y);WO9512138(A1)(Cat. Y);US4015366(A)(Cat. A);US5323317(A)(Cat. A)
- AB** - (WO9927768)
The present invention relates to a ground truth monitoring system for continuous agricultural stage evaluations. The system of the present invention is comprised of (a) at least one spectral data acquisition sensor unit (which is directed through at least one optical assembly toward a plant part monitoring target site), (b) at least one optical assembly for each sensor unit (and the optical assembly is at least one optical fiber or at least one lens or a combination thereof) and the optical assembly is connected to the sensor unit, (c) means for affixing the optical assembly in proximity to the target site, (d) a data transfer conduit (connected at one end to each sensor unit and at the other end to a data processing unit), and (e) the data processing unit wherein data from sensor units is normalized against species specific calibration standards.
- UP** - 2000-08


11 / 16 FAMPAT - ©QUESTEL-ORBIT - image

- FAN** - 20042790158006
- PN** -  US5761095 A 19980602 [US5761095]
 WO9840697 A1 19980917 [WO9840697]
 AU6455398 A 19980929 [AU9864553]
 US5930743 A 19990727 [US5930743]
- TI** - System for monitoring the depth of snow
- PA** - RGS L L C
RGS LLC
- PA0** - RGS, LLC, Gray ME [US]
- IN** - WARREN LARRY K
- AP** - 1997US-0815280 19970310; 1998AU-0064553 19980309; 1998WO-US04608 19980309; 1998US-0040665 19980318
- FD** - (US5930743)
Divsn of US815280 19970310 [1997US-0815280]
Division of: US5761095
- PR** - 1997US-0815280 19970310; 1998US-0040665 19980318; 1998WO-US04608 19980309
- IC** - G01B-007/00
- EC** - E01C-019/00C
E01H-005/00
G01C-007/04
G01W-001/14
- PCL** - ORIGINAL (O) : 702166000; CROSS-REFERENCE (X) : 702002000
- DS** - (WO9840697)

AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI
GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ
TM TR TT UA UG UZ VN YU ZW ARIPO Patent (GH GM KE LS MW SD SZ
UG ZW) Eurasian Patent (AM AZ BY KG KZ MD RU TJ TM) European Patent
(AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE) OAPI Patent
(BF BJ CF CG CI CM GA GN ML MR NE SN TD TG)

- CT** - (US5761095)
US4047042; US4977523; US5075693; US5266799; US5323317; US5379215;
US5418522; US5434574; US5517419; US5528518; US5557278; US5568385;
US5686841
- CT** - (US5930743)
US4047042; US4977523; US5075693; US5266799; US5323317; US5379215;
US5418522; US5434574; US5517419; US5528518; US5557278; US5568385;
US5686841; DE3104477 A1; DE3416246 C1; WO9516228
- CT** - (WO9840697)
Cited in the search report
DE3416246(C)(Cat. A); WO9516228(A1)(Cat. A); DE3104477(A1)(Cat. A)
- AB** - (US5761095)
A system is disclosed for monitoring the depth of snow with respect to the
ground. The system may employ a global positioning system and includes an
initialization unit for generating ground surface data representative of the surface
of the ground. The system also includes a snow surface data acquisition unit for
generating snow surface data representative of the surface of the snow. The
system further includes an analysis unit in communication with the ground
surface data and the snow surface data for comparing the ground and snow
surface data. Snow depth data is then generated representative of the area
between the ground and snow surfaces.
- UP** - 2000-08

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- FAN** - 20042782291731
- PN** -  US5999650 A 19991207 [US5999650]
- TI** - System for generating color images of land
- IN** - LIGON THOMAS R
- AP** - 1996US-0756375 19961127
- PR** - 1996US-0756375 19961127
- IC** - G06K-009/46
- EC** - G06T-011/00C
- PCL** - ORIGINAL (O) : 382191000; CROSS-REFERENCE (X) : 382110000
382162000 702002000
- CT** - (US5999650)
US4015366; US4227211; US4908763; US5323317
- AB** - (US5999650)
An imaging system produces an accurately colored representation of any desired
land portion of the Earth's surface based on its measured red and near infra-red

radiation. The land's image is composed of a set of pixels, each colored to represent the color of a corresponding area of the land. In the course of generating the image, the system classifies each area of the land based on scan data produced by satellites measuring red and near-infrared radiation from each area of the land. The system associates a color with each land class and colors the image pixel corresponding to each area of the land with the color associated with its class. The system allows an operator to supply input calibration data controlling the color associated with each class. Through an iterative process of adjusting the calibration data so as to make colors in the land image produced by the system conform to known colors of representative areas of that land, the operator can make the system produce an accurately colored image of the entire land. The system also generates a color classification display illustrating how it relates color to land classification. The color classification map display helps the operator to determine how to adjust the calibration data.

UP - 2000-08

13 / 16 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042781892615

PN -  CA2208212 A1 19971203 [CA2208212]
 FR2749469 A1 19971205 [FR2749469]
 EP0811857 A1 19971210 [EP-811857]
 FR2749469 B1 19980717 [FR2749469]
 US6118885 A 20000912 [US6118885]
 EP0811857 B1 20020828 [EP-811857]
 DE69714913 D1 20021002 [DE69714913]
 DE69714913 T2 20030102 [DE69714913]
 ES2183097 T3 20030316 [ES2183097]

TI - Airborne system for acquisition and processing of images with variable characteristics

PA - INST FRANCAIS DU PETROL

PA0 - Institut Francais du Petrole, Rueil-Malmaison Cedex [FR]

IN - RENOT ANDRE; GOILLOT CHARLES; SANDER ANDRE; WADSWORTH ALAIN

AP - 1996FR-0006907 19960603; 1997ES-0401102 19970520; 1997DE-6014913 19970520; 1997EP-0401102 19970520
 1997US-0867048 19970602; 1997CA-2208212 19970602

PR - 1996FR-0006907 19960603

IC - G01V-008/02

EC - G01V-008/02

PCL - ORIGINAL (O) : 382100000; CROSS-REFERENCE (X) : 348144000 370317000

DS - (EP-811857)
 DE ES FR GB GR IT

CT - (EP-811857)
 Cited in the search report
 US5379065(A)(Cat. X);GB2131649(A)(Cat. Y);EP589554(A2)(Cat. Y);DE4428055(A1)(Cat. A)

BAZZANI M ET AL: "AIRBORNE FLUOROSSENSORS, THE DESIGN OF HIGH SPECTRAL RESOLUTION SYSTEMS" QUANTITATIVE REMOTE SENSING FOR SCIENCE AND APPLICATIONS, FIRENZE, JULY 10 - 14, 1995, vol. 3, 10 juillet 1995, STEIN T I (ED), pages 1738-1740, XP000547195 (Cat. A)

DATABASE INSPEC INSTITUTE OF ELECTRICAL ENGINEERS, STEVENAGE, GB Inspec No. 4349187, GOWER J F R ET AL: "CCD-based imaging spectroscopy for remote sensing: the FLI and CASI programs" XP002039486 & CANADIAN JOURNAL OF REMOTE SENSING, OCT. 1992, CANADA, vol. 18, no. 4, ISSN 0703-8992, pages 199-208,(Cat. A)
 DATABASE INSPEC INSTITUTE OF ELECTRICAL ENGINEERS, STEVENAGE, GB Inspec No. 2326964, NEVILLE R A ET AL: "Development and evaluation of the MEIS II multidetector electrooptical imaging scanner" XP002027440 & ADVANCED INFRARED SENSOR TECHNOLOGY, GENEVA, SWITZERLAND, 18-19 APRIL 1983, vol. 395, ISSN 0277-786X, PROCEEDINGS OF THE SPIE - THE INTERNATIONAL SOCIETY FOR OPTICAL ENGINEERING, 1983, USA, pages 101-108,(Cat. A)

- CT** - (US6118885)
 US4134683; US4421981; US4678911; US4864127; US4908763; US4951136; US5323317; US5329595; US5467271; US5471056; US5557397; US5719949; US5764819; EP0589554; GB2131649
 Institute of Electrical Engineers, by R. A. Neville et al, "Development and Evaluation of the MEIS II Multidetector Electrooptical Imaging Scanner" (Abstract Only).

Institute of Electrical and Electronics Engineers, Jul. 1989, by Gower et al, "The FLI Airborne Imaging Spectrometer: Experience With Land and Water Targets", pp. 1024-1027.

- CT** - (FR2749469)
 Cited in the search report
 GB2131649(A)(Cat. Y);EP589554(A)(Cat. Y);US4678911(A)(Cat. A)
 DATABASE INSPEC INSTITUTE OF ELECTRICAL ENGINEERS, STEVENAGE, GB Inspec No. 2326964, NEVILLE R A ET AL: "Development and evaluation of the MEIS II multidetector electrooptical imaging scanner" XP002027440 & ADVANCED INFRARED SENSOR TECHNOLOGY, GENEVA, SWITZERLAND, 18-19 APRIL 1983, vol. 395, ISSN 0277-786X, PROCEEDINGS OF THE SPIE - THE INTERNATIONAL SOCIETY FOR OPTICAL ENGINEERING, 1983, USA, pages 101-108,(Cat. X)
 REMOTE SENSING: ECONOMIC TOOL FOR THE NINETIES, VANCOUVER, JULY 10 - 14, 1989, vol. 2, 10 Juillet 1989, INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, pages 1024-1027, XP000139231 GOWER J F R ET AL: "THE FLI AIRBORNE IMAGING SPECTROMETER: EXPERIENCE WITH LAND AND WATER TARGETS"(Cat. A)




- AB** - (EP-811857)
 The system is designed to collect and process images of a surveyed zone from an airborne system, with the aim of detecting significant alterations in this zone. The system includes a photo-sensitive matrix camera(1) adapted to acquire sequentially successive image bands(Bi), of an overflowed zone, in a series of narrow spectral windows.

The system has a control unit (2) which includes a section for selecting images from a site in one or several spectral bands, each grouping a defined number of spectral windows. The respective width and spectral functions ($F(\lambda)$) can be modified, as desired, using logic, based upon the nature of the phenomena being analysed in the domain of a certain application. The system also includes a compensation arrangement for easily connecting the images shifted by variations in the trajectory of the aircraft.

UP - 2000-08

14 / 16 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042772921202

PN -  CA2123147 A1 19950123 [CA2123147]
 EP0635960 A1 19950125 [EP-635960]
 US5689418 A 19971118 [US5689418]

TI - Agricultural communication network.

PA - AG CHEM EQUIPMENT CO

PA0 - Ag-Chem Equipment Company, Inc., Minnetonka MI [US]

IN - MONSON ROBERT J

AP - 1994CA-2123147 19940509; 1994EP-0303408 19940512; 1995US-0367952 19950103

FD - (US5689418)
 Cont. of US95909 19930722 [1993US-0095909] (Abandoned)

PR - 1993US-0095909 19930722; 1995US-0367952 19950103

IC - H04L-029/06

EC - A01B-079/00P
 H04L-029/06

PCL - ORIGINAL (O) : 702002000; CROSS-REFERENCE (X) : 382100000 706928000

DS - (EP-635960)
 AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

CT - (EP-635960)
 Cited in the search report
 EP460869(A2)(Cat. A)
 11312 MRC MOBILE RADIO CONFERENCE, November 1991, NICE FR
 pages 137 - 144 E. DAMOSSO ET AL. 'Network Planning Tools and Activities in Italy'(Cat. A)

CT - (US5689418)
 US4016542; US4630773; US4755942; US4876643; US4996645; US5107443;
 US5124909; US5136501; US5220876; US5287453; US5297195; US5299207;
 US5323317; US5379057; US5467271; EP203662; EP460869
 "Land-Use Mapping by Digital Processing of Space Images, Hungary" by
 Goczan et al, Abstract, Elsevier Science Ltd. 1994.

Damosso et al "Network Planning Tools and Activities in Italy", 11312 MRC
 Mobile Radio Conference, Nov. 13-15, 1991, Nice, France, pp. 137-144.

AB - (EP-635960)


An agricultural communications network including a master system which polls lower level systems for digital maps, each map comprising field character information indicative of a feature at each location of a farmer's field. An agronomist can correlate the data of the digital maps to ascertain common conditions which realize maximum yields. Farmers and their regional dealers participate in the system through subscription. Anonymity is maintained through hierarchy such that the farmers will participate in the network, thus expanding the data base for use by the agronomist. Thus, the participating subscribers facilitate expansion of the field of agronomy for the benefit of all.

<IMAGE>

UP - 2000-08

15 / 16 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042771350430

PN -  US5546572 A 19960813 [US5546572]

TI - Method for retrieving database of image information

PA - HITACHI LTD

PA0 - Hitachi, Ltd., Tokyo [JP]

IN - KODAIRA TAKATOSHI; MATSUMOTO KUNIAKI; KOMURA FUMINOBU; SETO YOUICHI; TEZUKA SHU; KIKUCHI MASAHIRO

AP - 1992US-0934336 19920825

PR - 1991JP-0216890 19910828

IC - G06T-017/00

EC - G06F-017/30L

PCL - ORIGINAL (O) : 707005000; CROSS-REFERENCE (X) : 714001000

CT - (US5546572)
 US4737916; US4748678; US4873513; US5043902; US5073819; US5113178;
 US5121326; US5123088; US5124915; US5165103; US5179649; US5185673;
 US5201048; US5267351; US5323317; US5350303
 Technical Report of the Institute of Electronics, Information and Communication Engineers of Japan, vol. IE87-90, 1987, pp. 36-43.

"Image Data Processing and Analysis(1)", compiled by Foundation of Resource Observation and Analysis Center, Mar. 1991, pp. 137-141.

"Precise Correction Technique for Earth Observation Satellite", Institute of Electrical Engineers of Japan, Ihara et al., vol. 101, No. 4, pp. 317-324, no date.

"Guide to Computer Image Processing", Sohken Publishing Ltd., by H. Tamura, 1985, pp. 150-151.

Gonzalez et al., "Digital Image Processing", vol. 1, Addison-Wesley publish Co., 1992, pp. 296-303 and 580-586.

Colwell, "Manuel of Remote Sensing", vol. 1, American Society of Photogrammetry, 1983, pp. 873-891.


"Registering Lansat Image by Point Matching", Jezching, Ton, Anil K. Jain; Sep. 1989; pp. 642-651.

Stuart Abrams; "Interactive MRI and CT image analysis with a microcomputer system", IEEE, 1988, p. 1.

Smotroff et al.; "Metrological Classification of Satellite Imagery using Neural Network Data Fusion"; IEEE, 1990, pp. 23-28.

- AB** - (US5546572)
A retrieving key representing position information is used to retrieve image information containing the retrieving key information at a high speed and high precision. First a retrieving key is inputted to display retrieval information. The retrieving key is used to retrieve an image having a large size relative to a geometric distortion error, and the longitude/latitude conversion coefficients of the retrieved image are corrected. By using the corrected longitude/latitude conversion coefficients, an image having a small size relative to the geometric distortion error is retrieved, and the retrieved image is subject to distortion correction and image magnification.
- UP** - 2000-08

16 / 16 FAMPAT - ©QUESTEL-ORBIT - image

- FAN** - 20042770952613
- PN** -  US5323317 A 19940621 [US5323317]
- TI** - Method and apparatus for determining runoff using remote geographic sensing
- PA** - HAMPTON TERRY L
METTEL M CARSON
- IN** - HAMPTON TERRY L; METTEL M CARSON
- AP** - 1991US-0664564 19910305
- PR** - 1991US-0664564 19910305
- IC** - G01V-001/00
- EC** - B64G-001/66
G01S-013/86
G01S-013/89
G01S-013/95C
- PCL** - ORIGINAL (O) : 702003000
- CT** - (US5323317)
US3598980; US4227211; US4908763; JP63-238591
Water Resources Bulletin, American Water Resources Association, Dec., 1986, Draper et al., vol. 26 No. 6.

IEE Transactions on Geoscience and Remote Sensing, vol. GE-22, No. 6, Nov. 1984.

Water Resources Bulletin, American Water Resources Association, Feb. 1990, vol. 1, Rango et al.

P. A. DeBarry et al., "Computer Watersheds", Civil Engineering, vol. 60, No. 7,

pp. 67-70 (Jul. 1990).

W. Skipwith et al., "Closing the Floodgates", Civil Engineering, vol. 60, No. 7, pp. 54, 55 (Jul. 1990).

AB - (US5323317)


Images of a selected geographic region are obtained using remote sensing apparatus and are processed to determine characteristic spectral reflectance patterns associated with different ground covers and soil types in the region. The image processing means compares the spectral reflectance patterns to image pixel values in order to classify each pixel in a ground cover or soil type class, the corresponding spectral reflectance pattern for which matches the pixel value. In a preferred embodiment of the invention, Geographic Information System (GIS) software is utilized to combine a remotely sensed image providing ground cover classifications for a geographic region with a remotely sensed image providing soil type classifications for the same region in order to generate a rainfall loss function. The rainfall loss function can then be used to determine a runoff curve number (RCN) for the region, to determine probable maximum flood (PMF), or to generate various design flood hydrographs corresponding to different precipitation events using a computer water shed model.

UP - 2000-08


Search statement 7

Query/Command : prt set max

1 / 2 FAMPAT - ©QUESTEL-ORBIT

FAN - 20042803045053
PN - GB0314875 D0 20030730 [GB200314875]
  GB2403356 A 20041229 [GB2403356]
TI - Low voltage power source
PA - HYDROK
 HYDROK UK LTD
IN - RIVERS STEPHEN DAVID
AP - 2003GB-0014875 20030626
PR - 2003GB-0014875 20030626
IC - B01D-029/64 H02J-007/32
EC - B01D-029/64
 H02J-007/35M
CT - (GB200314875)
 Cited in the search report
 GB1287347(A);DE3405466(A1);DE19646612(C1);DE20300126
 (U1);DE29922820(U1);JP11173254(A);JP2003046659(A);US5074996
 (A);US5571406(A);US2003071737(A);WO03008803(A1)
AB - (GB200314875)
 A low voltage power source comprises a wind turbine 1 or a photovoltaic cell 2,
 or a combination of both, which charge a battery pack 3. The battery pack will in
 turn power an electric motor 5 which will drive a hydraulic pump 6 which
 charges an accumulator or pressure reservoir. The stored energy will be used to
 operate a hydraulic ram10 which operates a machine to clean the filter screen 14
 in a combined sewer overflow system 13. The system controls 11 will
 incorporate an alarm system with the facility to report faults and access controls
 through the medium of a cellular phone.s
UP - 2003-34

2 / 2 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042801749325
PN -  US2003071737 A1 20030417 [US20030071737]
TI - Automated stormwater monitoring system and method
IN - NAWATHE DILIP
AP - 2001US-0977976 20011016
PR - 2001US-0977976 20011016
IC - G08B-021/00
EC - G01W-001/14
PCL - ORIGINAL (O) : 340616000; CROSS-REFERENCE (X) : 340602000
AB -
 (US20030071737)
 Stormwater running at a construction site is monitored from an off-site location.
 When rainfall of a selected level is detected on site, a specimen of runoff is

collected and an offsite station signaled that the event has occurred.

UP - 2003-17

Search statement 10

Set	Items	Description
S1	67	S AU= (NOE S? OR NOE, S?)
S2	146236	S RUNOFF? OR RUN()OFF? OR RUN??? (2N)OFF? OR OVER(2N)(FLOW? OR SPILL?) OR OVERFLOW? OR OVERSPILL?
S3	310998	S PRECIPITATION? OR RAIN? OR RAINFALL?
S4	0	S S1 AND S2 AND S3
S5	4	S S1 AND (S2 OR S3)

? show files

[File 344] **Chinese Patents Abs** Jan 1985-2006/Jan
(c) 2006 European Patent Office. All rights reserved.

[File 371] **French Patents** 1961-2002/BOPI 200209
(c) 2002 INPI. All rts. reserv. All rights reserved.
**File 371: This file is not currently updating. The last update is 200209.*

[File 347] **JAPIO** Nov 1976-2005/Sep(Updated 060103)
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[File 350] **Derwent WPIX** 1963-2006/UD,UM &UP=200607
(c) 2006 Thomson Derwent. All rights reserved.
**File 350: For more current information, include File 331 in your search. Enter HELP NEWS 331 for details.*

[File 348] **EUROPEAN PATENTS** 1978-2005/Dec W04
(c) 2006 European Patent Office. All rights reserved.
**File 348: For important information about IPCR/8 and forthcoming changes to the IC= index, see HELP NEWSIPCR.*

[File 349] **PCT FULLTEXT** 1979-2005/UB=20051229,UT=20051222
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**File 349: For important information about IPCR/8 and forthcoming changes to the IC= index, see HELP NEWSIPCR.*

```

d s
Set      Items      Description
S1       349421     S RUNOFF? OR RUN()OFF? OR RUN??? (2N)OFF? OR OVER(2N) (FLOW? OR SPILL?) OR
OVERFLOW? OR OVERSPILL?
S2       1165316    S PRECIPITATION? OR RAIN? OR RAINFALL?
S3       17486913   S GAUG????? OR MEASUR????? OR CIRCUIT?
S4       16650      S COLLECT???? (3N) TUBE?
S5       1224921    S INFILTRAT????? OR PENETRAT????? OR PERMEAT?
S6       3991508    S SOIL OR DIRT? OR EARTH?
S7       15005      S S1 AND S2 AND S3
S8       36256      S S1(4N)S2
S9       36256      S S8 AND S2
S10      2          S S4 AND S9
S11      159582     S RUNOFF? OR RUN()OFF? OR RUN??? (2N)OFF?
S12      14068      S S11 AND S2 AND S3
S13      114        S S12 AND (TUBE? ? OR CONTAINER?)
S14      71         RD (unique items)
S15      68         S S14 AND PY<=2004
S16      9323       S S5 AND S1 AND S6
S17      5906       S S2 AND S16
S18      635        S S17 AND (TUBE? ? OR CONTAINER? OR COLLECT?)
S19      8945       S S11 AND S5 AND S6
S20      5801       S S19 AND S2
S21      614        S S20 AND (TUBE? ? OR CONTAINER? OR COLLECT?)
S22      0          S S21 AND (BACK()FLOW? OR BACK()HEAD? OR BACKFOLW? OR BACKHEAD?)
S23      1          S S20 AND S4
S24      2          S S17 AND S4
S25      2          S S23 OR S24
S26      2          RD (unique items)
S27      83         S (RUNOFF? OR RUN()OFF? OR RUN??? (2N)OFF?) AND (TUBES OR TUBE OR TUBING)
AND S5
S28      66         RD (unique items)
S29      53         S S28 NOT (S26 OR S15)
S30      48         S S29 AND PY<=2004

```

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**File 2: Archive data back to 1898 has been added to File 2.*

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[File 8] **Ei Compendex(R) 1970-2006/Jan W4**

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[File 25] **Weldasearch-19662005/Dec** (c) 2005 TWI Ltd

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[File 347] **JAPIO** Nov 1976-2005/Sep(Updated 060103)

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[File 350] **Derwent WPIX** 1963-2006/UD,UM &UP=200607

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INSPEC

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08814998 **INSPEC Abstract Number:** A2004-03-9240-065

Title: Experimental study of water fluxes in a residential area. 2. Road infiltration, runoff and evaporation

Author Ragab, R.; Rosier, P.; Dixon, A.; Bromley, J.; Cooper, J.D.

Author Affiliation: Centre for Ecology & Hydrology, Wallingford, UK

Journal: Hydrological Processes vol.17, no.12 p. 2423-37

Publisher: Wiley ,

Publication Date: 30 Aug. 2003 **Country of Publication:** UK

CODEN: HYPRE3 **ISSN:** 0885-6087

SICI: 0885-6087(20030830)17:12L.2423:ESWF;1-9

Material Identity Number: L934-2003-012

U.S. Copyright Clearance Center Code: 0885-6087/03/\$30.00

Language: English **Document Type:** Journal Paper (JP)

Treatment: Experimental (X)

Abstract: For pt.1 see *ibid.*, vol.17, no.12, p.2409-22 (2003). Lack of accurate data has led some hydrologists and city planners to assume that urban infiltration is zero and **runoff** is 100% of the **rainfall**. These assumptions lead to an over estimation of road **runoff** volume and an underestimation of direct recharge to groundwater, which is already rising under some UK cities. This study investigates infiltration and **runoff** processes and quantifies the percentage of **rainfall** that contributes to storm drainage, and that which infiltrates through different types of road surface. Access **tubes** were installed for **measuring** soil water content using a neutron probe in three car parks, a road and a grass site at the Centre for Ecology and Hydrology, Crowmarsh Gifford, Wallingford. Storm drainage was recorded at the exit of the Thamesmead Estate in Crowmarsh Gifford, just before the drain joins the River Thames at Wallingford. **Rainfall** and water table depth were also recorded. Weekly **measurements** of soil moisture content indicated that the top 40 cm layer is not influenced by water-table fluctuations and, therefore, positive changes in soil moisture could be attributed to infiltration of **rainfall** through the surface. Depending on the nature of the surface, subsurface layers, level of traffic, etc., between 6 and 9% of **rainfall** was found to infiltrate through the road surfaces studied. The storm drainage generated by road **runoff** revealed a flow pattern similar to that of the receiving watercourse (River Thames) and increased with the increase of infiltration and soil water content below the road surface. The ratio of **runoff** to **rainfall** was 0.7, 0.9 and 0.5 for annual, winter (October-March) and summer (April-September) respectively. As the results of the infiltration indicated that 6 to 9% of annual **rainfall** infiltrates through the road surface, this means that evaporation represents, 21-24% of annual **rainfall**, with more evaporation taking place during summer than winter. (19 Refs)

Subfile: A

Descriptors: evaporation; groundwater; hydrology; **rain**; roads; storms

Identifiers: experimental water flux study; residential area; road surface infiltration; road surface **runoff**; evaporation; urban infiltration; **rainfall** percentage; groundwater recharge; UK; **runoff** processes; storm drainage; road surface type; access **tube**; neutron probe; grass site; Centre for Ecology and Hydrology; Crowmarsh Gifford; Wallingford; Thamesmead Estate; River Thames; water table depth; soil moisture content; water-table fluctuation; impervious surface; subsurface layer; flow pattern; watercourse; **rainfall-runoff** ratio; winter season; summer season

Class Codes: A9240E (Precipitation (hydrological)); A9240K (Groundwater); A9330K (Islands); A9260Q (Atmospheric storms); A9240J (Evaporation and transpiration (hydrological)); A9330G (Europe)

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08814937 INSPEC Abstract Number: A2004-03-9240-034

Title: A comparative study in modelling runoff and its components in two mountainous catchments

Author Gurtz, J.; Zappa, M.; Jasper, K.; Lang, H.; Verbunt, M.; Badoux, A.; Vitvar, T.

Author Affiliation: Inst. for Atmos. & Climate Sci., Swiss Fed. Inst. of Technol., Zurich, Switzerland

Journal: Hydrological Processes **Conference Title:** Hydrol. Process. (UK) vol.17, no.2 p. 297-311

Publisher: Wiley ,

Publication Date: 15 Feb. 2003 **Country of Publication:** UK

CODEN: HYPRE3 **ISSN:** 0885-6087

SICI: 0885-6087(20030215)17:2L:297:CSMR;1-P

Material Identity Number: L934-2003-002

U.S. Copyright Clearance Center Code: 0885-6087/03/\$30.00

Conference Title: Runoff Generation and Implications for River Basin Modelling

Conference Date: 9-12 Oct. 2000 **Conference Location:** Freiburg, Germany

Language: English **Document Type:** Conference Paper (PA); Journal Paper (JP)

Treatment: Theoretical (T)

Abstract: In mountainous catchments the quality of **runoff** modelling depends strongly on the assessment of the spatial differences in the generation of the various **runoff** components and of the flow paths as coupled with the amount and intensity of **precipitation** and/or the snow melting. These catchments are also suitable for the intercomparison of different kinds of hydrological models, particularly of different approaches for the simulation of **runoff** generation. Two differently structured catchment models were applied on the pre-Alpine Rietholzbach research catchment (3.2 km²/sup 2/) within the period 1981-98 and on the high-Alpine Dischmabach catchment (43 km²/sup 2/) within the period 1981-96 for the simulation of hydrological processes and of the **runoff** hydrographs. The models adopted are the more physically based WaSiM-ETH model, with grid-oriented computation of the water balance elements, and the rather conceptual PREVAH model, based on hydrological response units. The simulation results and the differences resulting from the application of the two models are discussed and compared with the observed catchment discharges, with **measurements** of evapotranspiration, soil moisture, outflow of a lysimeter, and of groundwater levels in three access **tubes**. The model intercomparison indicates that the two approaches for determining **runoff** generation with different degrees of complexity performed with similar statistical efficiency over a period longer than 15 years. The analysis of the simulated **runoff** components shows that the interflow is the main **runoff** component and that the portion of the **runoff** components depends strongly on the approach used. The snowmelt model component is of decisive importance in the snowmelt season and needs to take into account the role of air temperature and radiation for simulating **runoff** generation in a spatially distributed manner. (26 Refs)

Subfile: A

Descriptors: atmospheric temperature; evaporation; groundwater; hydrology; rivers; snow; soil; transpiration

Identifiers: **runoff** modelling; **runoff** component; mountainous catchment model; spatial difference; **runoff** generation; flow path; **precipitation** amount; **precipitation** intensity; hydrological model; pre-Alpine Rietholzbach research catchment; AD 1981 to 1998; high-Alpine Dischmabach catchment; Switzerland; AD 1981 to 1996; **runoff** hydrograph; physically based WaSiM-ETH model; grid-oriented computation; water balance element; conceptual PREVAH model; hydrological response unit; catchment discharge; evapotranspiration; soil moisture; lysimeter; groundwater level; model intercomparison; statistical efficiency ; interflow; snowmelt model component; snowmelt season; air temperature; radiation

Class Codes: A9240F (Rivers, runoff, and streamflow); A9240L (Soil moisture); A9240R (Land surface snow);

A9240J (Evaporation and transpiration (hydrological)); A9240K (Groundwater); A9240C (General hydrological theory); A9260K (Temperature of the lower atmosphere); A9330G (Europe)
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15/9/6 (Item 3 from file: 6) [Links](#)

NTIS

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PB89-132567

Hydrological Sampling: A Characterization in Terms of Rainfall and Basin Properties

(Master's thesi)

Tarboton, D. G. ; Bras, R. L. ; Puente, C. E.

Massachusetts Inst. of Tech., Cambridge. Ralph M. Parsons Lab.

Corporate Source Codes: 001450002

Sponsor: Geological Survey, Reston, VA. Water Resources Scientific Information Center.; National Science Foundation, Washington, DC.

Report Number: R88-12; REPT-319

Aug 88 187p

Language: English

Journal Announcement: GRAI8906

Sponsored by Geological Survey, Reston, VA. Water Resources Scientific Information Center, and National Science Foundation, Washington, DC.

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NTIS Prices: PC A09/MF A01

Country of Publication: United States

Contract Number: DI-14-08-0001-G-1143; NSF-ECE85-13556

The sampling of **rainfall** and **runoff** processes is considered, both in time and in space, and the sampling problem is linked to basin and **rainfall** characteristics. Sampling strategies are defined by the number of **rain** gages, **rainfall measurement** interval and flow **measurement** interval. The effectiveness of different sampling strategies is **measured** by the variance of the error in estimating either the volume or peak of streamflow. This is related to the **rainfall** and basin **rainfall-runoff** properties through parameterizations of these processes. Several **rainfall** parameterizations are used including stationary and non-stationary event based models. **Runoff** from **rainfall** is parameterized in terms of the fluvial geomorphology of the basin. Linear filtering techniques are used to compute the variance of the estimation error for different sampling strategies. The results are given in the form of quasi-general design aids, which can be used to select appropriate sampling options for network design.

Descriptors: ***Rainfall**; ***Runoff**; ***Basins(Containers)**; ***Hydrology**; ***Sampling**; **Streamflow**; **Flow measurement**; **Mathematical models**; **Predictions**; **Precipitation(Meteorology)**; **Estimates**; **Error analysis**

Identifiers: NTISDIOWRT

Section Headings: 55E (Atmospheric Sciences--Physical Meteorology); 48G (Natural Resources and Earth Sciences--Hydrology and Limnology)

15/9/9 (Item 6 from file: 6) [Links](#)

NTIS

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682/XAB

An Automatic Runoff Sampler

Cross, O. E.

Nebraska Univ., Lincoln. Dept. of Agricultural Engineering.

Report Number: W72-00118; OWRR-B-003-NEB(2)

Jun 71 8p

Journal Announcement: GRAI7123

Presented at the Annual Meeting of the American Society of Agricultural Engineers, Pullman, Wash. 27-30 Jun 71. Paper-71-520.

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NTIS Prices: PC A02/MF A01

Contract Number: OWRR-B-003-NEB

A **runoff** sampling device is described that will automatically start itself, collect samples, and cease operation after a predetermined time period. The sampler must be reset for the next **runoff** event. The sampler may also be utilized to collect samples resulting from irrigation **runoff**. The major design parameters imposed upon this device were: (1) Activation whenever **runoff** occurred; (2) Samples taken at preselected time intervals; (3) Continuously record quantity of **runoff**; (4) Prevent intermixing of successive samples; and (5) Deactivate all **circuitry** after completion of sampling cycle. Illustrations show the unit with sample **containers** mounted on a turntable and the schematic wiring diagram for the sampler. A small capacity pump and flexible tubing delivers water to the sampler **containers**. The unit may be designed to operate on alternating or direct current. (Author)

Descriptors: *Data acquisition; *Samplers; *Surface water **runoff**(Surveys); Automatic control; Irrigation; Rainfall; Wiring diagrams; Design; Electric switches; Surveys

Identifiers: NTISOWRR

Section Headings: 94K (Industrial and Mechanical Engineering--Laboratory and Test Facility Design and Operation); 48G (Natural Resources and Earth Sciences--Hydrology and Limnology)

15/9/15 (Item 6 from file: 8) [Links](#)

Ei Compendex(R)

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04683888 E.I. No: EIP97043632139

Title: Management of roof run off conservation and reuse

Author: Pazwash, Hormoz; Boswell, Stephen T.

Corporate Source: Boswell Engineering, South Hackensack, NJ, USA

Conference Title: Proceedings of the 1997 24th Annual Water Resources Planning and Management Conference

Conference Location: Houston, TX, USA **Conference Date:** 19970406-19970409

Sponsor: ASCE

E.I. Conference No.: 46316

Source: Aesthetics in the Constructed Environment Proceedings of the Annual Water Resources Planning and Management Conference 1997. ASCE, New York, NY, USA. p 784-789

Publication Year: 1997

CODEN: 85MDAW

Language: English

Document Type: CA; (Conference Article) **Treatment:** G; (General Review)

Journal Announcement: 9706W3

Abstract: The management of urban storm water **runoff** has advanced significantly during the past two decades. Storm water management practices were initially intended to primarily regulate the peak rates of **runoff** from developments. These practices were later modified to also incorporate **measures** to enhance the water quality. The state of art practices now tend to devise the best management practices (BMP's) defined as the best methods to minimize the impacts of urban storm water **runoff** and none point source pollutants. The current practices, however, do not consider the **runoff** as a water resource which can be conserved and reused. Suggested methods of conserving the urban storm water were introduced by one of the authors in 1994. Specific means of collecting and reusing the roof **runoff** are presented herein. Roof **runoff** may be collected in **rain** tanks which may be placed in attic space or installed on or below ground. Since, this **runoff** is fairly pure, it is suitable for use with no treatment in a variety of indoor demands and even more so for the outdoor uses such as lawn and landscape watering, car washing, and deck and driveway cleaning. Offered in the paper are the authors' suggested design criteria for sizing the **rain** tanks and recommended **measures** to handling the **runoff** during cold season. (Author abstract) 5 Refs.

Descriptors: ***Runoff**; Management; Water conservation; Water recycling; Water quality; Tanks (**containers**); Design

Identifiers: Storm water **runoff**; Best management practices; **Rain** tank

Classification Codes:

442.1 (Flood Control); 444.1 (Surface Water); 445.1 (Water Treatment Techniques); 445.2 (Water Analysis); 619.2 (Tanks)

442 (Flood Control & Land Reclamation); 444 (Water Resources); 445 (Water Treatment); 619 (Pipes, Tanks & Accessories)

44 (WATER & WATERWORKS ENGINEERING); 61 (PLANT & POWER ENGINEERING)

15/9/17 (Item 8 from file: 8) [Links](#)

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Ei Compendex(R)

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00701872 E.I. Monthly No: EI7803020805 E.I. Yearly No: EI78071153

Title: SIMULATION OF SMOOTH-VARIABLE INTENSITY RAINFALL PATTERNS.

Author: Alfaro, Jose F.; Hachum, Ahmed Y.

Corporate Source: Utah State Univ, Logan

Source: Water Resources Bulletin v 13 n 2 Apr 1977 p 349-364

Publication Year: 1977

CODEN: WARBAQ **ISSN:** 0043-1370

Language: ENGLISH

Journal Announcement: 7803

Abstract: A new technique for simulating smooth-variable intensity **rainfall** patterns is presented. This technique is based on the fundamental principles of a moving water head in a **container**. The proposed technique is general and capable of simulating any **rainfall** pattern. However, as the **rainfall** pattern gets more complicated, the equipment required for simulation becomes more involved. The proposed technique has been tested experimentally. A close agreement was found between the theoretical and experimental simulations. It is concluded that the proposed technique might be useful in studying the infiltration and **runoff** processes under variable intensity **rainfall**, especially for simple convex patterns. 11 refs.

Descriptors: *RAIN AND RAINFALL; METEOROLOGY; RUNOFF-- Measurements

Identifiers: RAINFALL SIMULATION

Classification Codes:

442 (Flood Control & Land Reclamation); 443 (Meteorology); 444 (Water Resources)

44 (WATER & WATERWORKS ENGINEERING)

15/9/19 (Item 2 from file: 34) [Links](#)

Fulltext available through: [USPTO Full Text Retrieval Options](#)

SciSearch(R) Cited Ref Sci

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12816995 **Genuine Article#:** 821WJ **Number of References:** 9

Automated erosion wheel: A new measuring device for field erosion plots

Author: Klik A (REPRINT) ; Sokol W; Steindl F

Corporate Source: Univ Natl Resources & Appl Life Sci,BOKU,Vienna//Austria/ (REPRINT); Univ Natl Resources & Appl Life Sci,BOKU,Vienna//Austria/

Journal: JOURNAL OF SOIL AND WATER CONSERVATION , 2004 , V 59 , N3 (MAY-JUN) , P 116-121

ISSN: 0022-4561 **Publication date:** 20040500

Publisher: SOIL WATER CONSERVATION SOC , 7515 N E ANKENY RD, ANKENY, IA 50021-9764 USA

Language: English **Document Type:** ARTICLE

Geographic Location: Austria

Journal Subject Category: ECOLOGY; AGRICULTURE, SOIL SCIENCE; WATER RESOURCES

Abstract: For erosion experiments in the field where no electric power is available an automated device for **runoff** and soil loss **measurements** was developed. This equipment is designed for continuous **runoff measurement** from plots up to 60m(2). The design is similar to a turning wheel with a horizontal axle. The automated erosion wheel (AEW) consists of four equal sections each one holding five liters (1(.32 gal) resulting in a resolution for each tip of 0.08 min (0.003 in) for 60m(2) plots. The automated erosion wheel is capable of **measuring** a maximum rate of 75L min(-1) (19.81 gal min(-1)). Each tip is monitored automatically in real time by a data acquisition system. Up to three automated erosion wheels can be connected to one data logger. The whole system is powered by one solar panel. Soil-water-suspension is divided by an adapted multi-tube divisor. About 3.4% of the **runoff** is sampled in a plastic barrel for determination of sediment concentration and soil loss. At this stage no temporal distribution of sediment delivery can be recorded by the automated erosion wheel. After each erosive **rain** storm, collectors are emptied and samples are taken to the lab for further analyses. With calibration of the tipping buckets volumes an accurate, time distributed **runoff measurement** is possible. The maximum error in sediment concentration **measurement** is 1.1%. Therefore, the chosen multitube device is able to collect representative **runoff** samples containing same sediment concentration as surface **runoff**. Each automated erosion wheel system is located in a shed. The automated erosion wheel has been used at three locations in Austria since 1997.

Descriptors--Author Keywords: flow sampler ; **runoff** ; soil loss ; tipping bucket

Identifiers-- KeyWord Plus(R): DROP-BOX WEIR

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15/9/28 (Item 11 from file: 34) [Links](#)

Fulltext available through: [USPTO Full Text Retrieval Options](#)

SciSearch(R) Cited Ref Sci

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04281310 **Genuine Article#:** RR928 **Number of References:** 37

AN EXAMINATION OF THE RELATIONSHIP BETWEEN ERODIBILITY PARAMETERS AND SOIL STRENGTH

Author: MISRA RK; ROSE CW

Corporate Source: COOPERAT RES CTR TEMPERATE HARDWOOD FORESTRY, LOCKED BAG 2/SANDY BAY/TAS 7005/AUSTRALIA/; GRIFFITH UNIV, FAC ENVIRONM SCI/BRISBANE/QLD 4111/AUSTRALIA/

Journal: AUSTRALIAN JOURNAL OF SOIL RESEARCH, 1995, V 33, N4, P 715-732

ISSN: 0004-9573

Language: ENGLISH **Document Type:** ARTICLE

Geographic Location: AUSTRALIA

Subfile: SciSearch; CC AGRI--Current Contents, Agriculture, Biology & Environmental Sciences

Journal Subject Category: AGRICULTURE, SOIL SCIENCE

Abstract: Erosion rate of soil by the impact of **raindrops** and overland flow of water is often considered to be affected by the shear strength of surface soil. Physically based erosion models indicate a link between defined erodibility parameters and soil strength. The objectives of this paper are to determine erodibility parameters with the process-based erosion model GUEST for a krasnozem soil of two contrasting strengths, and to examine the influence of soil strength on erodibility parameters.

Soil beds of width 1 m and length 5 . 8 m, with and without compaction, were exposed to simulated, constant rate **rainfall**. A range of slopes was used. Detachment trays of width 300 mm and downslope length 200 mm containing soils of identical strength were placed at the same slope and exposed to the same **rain** in order to determine the effects of **rainfall**-driven processes alone on erosion. Soil strength was **measured** with a hand vane tester and a pocket penetrometer to determine whether compaction was effective in modifying soil strength. Temporal variation in sediment concentrations (c) for the large soil beds and detachment trays was **measured** for each slope and soil strength. The settling velocity characteristic of soil, with and without exposure to **rain**, was determined with the modified bottom withdrawal **tube** technique.

Values of c decreased with increase in soil strength. The relationship between c and slope was influenced by soil strength in a manner consistent with the theoretical expectation of the role of soil strength in controlling erosion. Rilling during erosion was absent only when the soil was compacted. The average settling velocity of the soil exposed to **rain** (i.e. its depositability) was significantly lower than for the same soil not subjected to **rain**, indicating a breakdown of soil aggregates as a result of **raindrop** impact. **Rainfall** detachability parameters (estimated with GUEST) Were lower when soil strength was high. **Runoff**-driven erodibility parameters, namely the specific energy of entrainment (J), increased and the approximate erodibility parameter (beta) decreased with increase in soil strength. The Variation in these erodibility parameters with soil strength was consistent with the theory implemented in GUEST. Detailed analysis of the relative contribution of **rainfall**- and **runoff**-driven processes to c at varying stream powers and soil strengths indicated that, at high soil strength, uncertainty in the values of J and beta is high because of the higher contribution to c of **rainfall**-driven rather than **runoff** -driven processes. The adequacy of in situ **measurement** of soil strength as an indicator of soil erodibility is discussed in relation to the results presented.

Descriptors--Author Keywords: COMPACTION ; DETACHMENT ; EROSION ; EROSION MODELS ; SOIL ERODIBILITY ; SOIL LOSS ; SOIL STRENGTH

Identifiers-- KeyWords Plus: AGGREGATE SETTLING VELOCITIES; MODELING WATER EROSION; RAINFALL DETACHMENT; RAINDROP IMPACT; PHYSICAL PRINCIPLES; SPLASH DETACHMENT; SHEAR-STRENGTH; LOW SLOPES; FLOW; DEPOSITION

Research Fronts: 93-4252 001 (LUPIN CROPS IN DUPLEX SOILS; SUBTERRANEAN CLOVER; PHOSPHATE REQUIREMENTS; YELLOW SERRADELLA; SOUTHERN AUSTRALIA; SEED YIELDS; LOW RAINFALL WHEAT-BELT)

93-7782 001 (DUPLEX SOILS; SOUTH AUSTRALIA; ACID PEROXIDE DIGESTION PROCEDURE FOR DETERMINING TOTAL NITROGEN)

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15/9/29 (Item 12 from file: 34) [Links](#)

Fulltext available through: [USPTO Full Text Retrieval Options](#)

SciSearch(R) Cited Ref Sci

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04275486 **Genuine Article#:** RT874 **Number of References:** 21

EFFECTS OF LATEX AND POLY-DADMAC ON EROSION, HYDROPHOBICITY AND WATER-RETENTION ON 2 DIFFERENT SOILS

Author: BERNAS SM; OADES JM; CHURCHMAN GJ

Corporate Source: UNIV ADELAIDE,DEPT SOIL SCI,WAITE CAMPUS,PMB 1/GLEN OSMOND/SA 5064/AUSTRALIA/; CSIRO,DIV SOILS/GLEN OSMOND/SA 5064/AUSTRALIA/

Journal: AUSTRALIAN JOURNAL OF SOIL RESEARCH , 1995 , V 33 , N5 , P 805-816

ISSN: 0004-9573

Language: ENGLISH **Document Type:** ARTICLE

Geographic Location: AUSTRALIA

Subfile: SciSearch; CC AGRI--Current Contents, Agriculture, Biology & Environmental Sciences

Journal Subject Category: AGRICULTURE, SOIL SCIENCE

Abstract: Latex (natural polymer) and poly-DADMAC (synthetic polymer) were applied to a red brown earth (Alfisol) and a Wiesenboden (Mollisol). **Run-off**, infiltration, sediment loss and water stable aggregates were **measured** after subjecting the soils to simulated **rainfall**. Water retention of latex and poly-DADMAC amended soils was determined. The MED test for hydrophobicity was also carried out for the latex-treated soil. Latex decreased **run-off** and erosion, and increased infiltration on both soils. Poly-DADMAC minimized **run-off** and erosion, and increased infiltration on the Wiesenboden. It increased **run-off** and decreased infiltration on the red-brown earth; however, it still decreased erosion. Latex increased the percentage of water-stable aggregates > 2 mm on the red-brown earth, but it had less effect on the Wiesenboden. Poly-DADMAC decreased the percentage of water-stable aggregates < 0.125 mm on both soils after simulated **rainfall**. Both latex and poly-DADMAC had little effect on water retention of the red-brown earth and the Wiesenboden. Application of 1.5 g kg⁻¹ of latex increased MED values of both soils, to give values that indicate moderate water-repellence but should not affect plant growth. Generally, latex was more effective on the red-brown earth and poly-DADMAC was more effective on the Wiesenboden. It seems that latex can be effective on all soil types, but poly-DADMAC will have more effect on clay soils.

Descriptors--Author Keywords: POLYMERS ; STRUCTURAL ; STABILITY ; INFILTRATION ; EROSION ; WATER REPELLENCE

Research Fronts: 93-3628 001 (VESICULAR-ARBUSCULAR MYCORRHIZAL FUNGI; SOIL AGGREGATION; ECTOMYCORRHIZAL SYMBIONTS OF CONTAINER-GROWN BLACK SPRUCE)

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15/9/35 (Item 2 from file: 94) [Links](#)

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04847020 JICST Accession Number: 01A0431019 File Segment: JICST-E

An experimental study of the effect of the flow in fractures on rainfall-runoff mechanism.

SAITO TETSUO (1) ; ONDA YUICHI (2); TSUJIMURA MAKI (2) ; SHIMOMURA RITSUKO (3)

(1) Nagoya Univ., Graduate School of Bioagricultural Sci., JPN ; (2) Univ. of Tsukuba, Inst. of Geosci. ; (3) Aichi Univ. of Educ.

Sabo Gakkaishi (Journal of the Japan Society of Erosion Control Engineering) , 2001 , VOL.53,NO.6 , PAGE.11-17 , FIG.11, TBL.1, REF.17

Journal Number: G0196AAY **ISSN:** 0286-8385

Universal Decimal Classification: 556.16

Language: Japanese **Country of Publication:** Japan

Document Type: Journal

Article Type: Original paper

Media Type: Printed Publication

Abstract: A large-scale sprinkling experiment, using a 625cm of slope having **tubes** at middle slope, simulating bedrock fissures, has been conducted to evaluating the role of bedrock fissures on subsurface water movement and **runoff** generation mechanisms. By drilling through the bottom of the **container** we made a 6-mm hole on the slope and connected 10 **tubes** simulating fractures. Each **tube** had a hemp cord in it, so it has considered the "quasi-fractures" that resembles hydraulic property of a real fracture surface. Both **runoff** from the sands and flow in the **tubes** were **measured** manually using a **measuring** cylinder. The data on soil moisture, water-table elevation, and piezometric head were also collected. The **runoff** peaks were found to be much greater than the **tube** flow peaks. However the **tube** flow peaks always coincides with the recession stage of **runoff** when the **runoff** was very small; the volume of **tube** flow was as much as half of the **runoff**. This suggests the possibility that the fracture flow in bedrock has a large effect on **rainfall-runoff** mechanism. (author abst.)

Descriptors: rock mass(ground); **rainfall**; crack; **runoff**; hydrograph; percolating water; slope(face); **runoff** characteristic; model test; ground water recharge

Identifiers: rainfall run-off

Broader Descriptors: ground; **precipitation**(meteorology); meteorological element; water; face; characteristic; test

Classification Codes: DC07020C

15/9/37 (Item 4 from file: 94) [Links](#)

Fulltext available through: [USPTO Full Text Retrieval Options](#)

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02780973 JICST Accession Number: 96A0529869 File Segment: JICST-E

Runoff analysis in a basin where a forest road was constructed by a complex tank model whose optimum arrangement of tanks and parameters were identified by a genetic algorithm.

ICHIHARA KOICHI (1) ; TOYOKAWA KATSUO (2); SAWAGUCHI ISAO (2)

(1) Univ. of Tsukuba, Inst. of Agric. and For. Eng. ; (2) For. and For. Prod. Res. Inst.

Nippon Ringakkaishi (Journal of the Japanese Forestry Society) , 1996 , VOL.78,NO.2 , PAGE.134-142 , FIG.7, TBL.3, REF.10

Journal Number: F0858AAW **ISSN:** 0021-485X **CODEN:** NIRKA

Universal Decimal Classification: 556.16.044/.048 630.3

Language: Japanese **Country of Publication:** Japan

Document Type: Journal

Article Type: Original paper

Media Type: Printed Publication

Abstract: Runoff and rainfall were measured in a basin where a forest road was constructed and the runoff was analyzed by a complex tank model. The complex tank model was made up of tanks of a valley, road surface, and roadside drainage area. Assuming that the tanks were units of a network and the pipes of runoff or infiltration were routes between the units, the optimum arrangement of the tanks and the optimum values of the parameters which were the coefficient and height of the pipes were decided by a genetic algorithm(GA). Calculated value of the runoff from rainfall by the complex tank model agreed with the measured value. Applying this model to other rainfalls, the calculated runoff roughly agreed with the measured value too. In the results, the optimum arrangement of the tanks, the optimum values of the parameters, and the coefficients of runoff of roads, of the valley, and of the roadside drainage area, could be obtained. It was clarified that the complex tank model was useful in predicting the runoff of the basin where a forest road was constructed and a GA was an excellent means to identify the arrangement of a tank model. (author abst.)

Descriptors: forest road; mountain watershed; amount of rainfall; runoff analysis; algorithm; tank model; road surface; valley; roadside; storage tank; network; optimum design; route; parameter; measurement data; optimization method; genetic algorithm

Broader Descriptors: road; watershed; amount of precipitation; meteorological element; rainfall characteristic; characteristic; hydrologic characteristic analysis; analysis; runoff model; hydrological model; model; pavement structure; road structure; container; design; data

Classification Codes: DC07030N; FF04000W

15/9/40 (Item 7 from file: 94) [Links](#)

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02566008 JICST Accession Number: 95A0656850 File Segment: JICST-E

Groundwater level fluctuation and runoff mechanism of the constructed step plowed field.(Sponsor : Ministry of Education).

KAJISA TAKAMITSU (1); WATANABE YUJI (1)

(1) Mie Univ., Fac. of Bioresour.

Ryuiki no Johatsu Sanryo no Henka ga Rikuchi Suitai no Mizu Shushi ni Oyobosu Eikyo. Heisei 6 Nendo.

No.04452292 , 1995 , PAGE.115-116 , FIG.2, TBL.1, REF.1

Journal Number: N19951153X

Universal Decimal Classification: 631.6

Language: Japanese **Country of Publication:** Japan

Document Type: Journal

Article Type: Short Communication

Media Type: Printed Publication

Abstract: Runoff mechanism is discussed based on the **measurement** of groundwater level fluctuation of the constructed step plow field which consists of cutting and banking. For the **measurement** of groundwater fluctuation, a vinyl chloride **tube** with small holes in which the hydraulic water level indicator is installed is buried in the auger hole. At the upstream section, 25mm of **rainfall** resulted in 40-50cm rise of groundwater level. Other findings are that the maximum value of the **runoff** contribution area almost equals the slope length of the watershed, etc.

Descriptors: ground water level; water level fluctuation; **runoff** rate; slope(face); amount of **rainfall**; cutting(ground); embankment(earth); **runoff** model

Broader Descriptors: water level; fluctuation and variation; flow rate; face; amount of **precipitation**; meteorological element; **rainfall** characteristic; characteristic; earthwork; construction work; construction(work); hydrological model; model

Classification Codes: FB02000W

15/9/42 (Item 9 from file: 94) [Links](#)

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02001894 JICST Accession Number: 94A0074668 File Segment: JICST-E

Evaluation of the runoff control effect of percolation type facilities.

SAKANO AKIRA (1); KOBAYASHI HIROAKI (1); TANAKA YOSHIHITO (1)

(1) Public Works Res. Inst.

Doboku Kenkyujo Kenkyu Happyokai Ronbunshu , 1993 , VOL.32nd , PAGE.89-92 , FIG.7, TBL.1

Journal Number: G0639BAT ISSN: 0386-5878

Universal Decimal Classification: 556.16.044/.048 627.51

Language: Japanese **Country of Publication:** Japan

Document Type: Conference Proceeding

Article Type: Short Communication

Media Type: Printed Publication

Descriptors: river management; hydrologic **measurement**; **runoff** analysis; **runoff** model; percolating water; water storage tank; amount of **rainfall**; **runoff** rate; urban disaster prevention; flood prevention; storage(water and fuel

Broader Descriptors: management; observation; hydrologic characteristic analysis; analysis; hydrological model; model; water; water tank; storage tank; **container**; amount of **precipitation**; meteorological element; **rainfall** characteristic; characteristic; flow rate; urban problem; problem; disaster prevention; preclusion(protection); storage

Classification Codes: DC07030N; RC12040I

15/9/59 (Item 6 from file: 350) Links
Derwent WPIX
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004795177

WPI Acc No: 1986-298518/**198645**

XRPX Acc No: N86-223090

**Rain-shed interrupting flow of water along HV cable -
has tube located on cable with helically coiled projections**

Patent Assignee: SIGMAFORM S AFT PTY (SIGM-N)

Inventor: FOXCROFT R C

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
ZA 8509426	A	19860625	ZA 859426	A	19851209	198645 B

Priority Applications (No Type Date): ZA 851169 A 19850215; ZA 859426 A
19851209

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
ZA 8509426	A	10		

Abstract (Basic): ZA 8509426 A

The **rain**-shed (10) is formed as an integral moulded **tube** (22) of a chemically or radiation cross-linked polymer with a helical projection (24) on its outer surface. The dia. of the **tube** is greater than that of the section of the cable end (13) over which it is intended to fit. Heat is applied to shrink it snugly around the cable end and the heat-shrink layer (20).

Rain water flowing down the cable end is diverted by the projection (24) and the combined effects of the slope of the **run-off** surface of the projection and the centrifugal centrifugal force acting on the water cause the water to **run off** the outer edges of the projection.

ADVANTAGE - As well as water, prevents entry of air-borne salt spray and grime forming conductive path leading to short **circuit**.
(Provisional basic advised week 86/40)

Title Terms: **RAIN**; SHED; INTERRUPT; FLOW; WATER; HV; CABLE;
TUBE; LOCATE; CABLE; HELICAL; COIL; PROJECT

Derwent Class: X12

International Patent Class (Additional): H01B-000/00

File Segment: EPI

Manual Codes (EPI/S-X): X12-E03X

15/9/60 (Item 7 from file: 350) Links
Derwent WPIX
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003088586

WPI Acc No: 1981-J8631D/198138

**Rain-water run-off meter - has pivoted
shutter flow stabilisers and slit vertical sampler pipe**

Patent Assignee: SOIL EROSION PROTEC (SOIL-R)

Inventor: GERASIMENK V P; KARTAMISHE N I; POSOKHOV A V

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
SU 793426	B	19810107				198138 B

Priority Applications (No Type Date): SU 2625192 A 19780531

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
SU 793426	B		2		

Abstract (Basic): SU 793426 B

Rain water **run-off** meter, for use on sloping land to **measure** the flow of **run-off** water, consists of an intake chute (1), an accumulating **container** (2), and a divider housing made in the form of a rectangular-section chute (3) with a trash grid (4).

The meter is designed for simplicity and so that it can be set on any part of a slope, and this is done by incorporating flow stabilisers and a sampler. The flow stabilisers are in the form of shutters (6) pivoted on axes (5) at the top of the chute (3), and the sampler is in the form of a vertical pipe (7) with a lengthwise slit, set vertically in between the shutters.

The sampler slit faces the current flow and broadens towards the lower end. As the water flows through the meter, a proportion of it is trapped by the sampler pipe and flows into the accumulating **container** (2), where it is used to **gauge** the full amount of the flow. Bul.1/7.1.81

Dwg.1

Title Terms: **RAIN**; WATER; RUN; METER; PIVOT; SHUTTER; FLOW;
STABILISED; SLIT; VERTICAL; SAMPLE; PIPE

Derwent Class: P11

International Patent Class (Additional): A01B-013/16

File Segment: EngPI

26/9/1 (Item 1 from file: 347) [Links](#)

JAPIO

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07890548 **Image available**

RAINWATER COLLECTION AND TREATMENT METHOD, RAINWATER COLLECTOR AND DRINKING WATER MAKER

Pub. No.: 2004-003307 [JP 2004003307 A]

Published: January 08, 2004 (20040108)

Inventor: ARIMURA NOBORU

Applicant: ARIMURA NOBORU

Application No.: 2003-095448 [JP 200395448]

Filed: March 31, 2003 (20030331)

Priority: 2002-124795 [JP 2002124795], JP (Japan), April 25, 2002 (20020425)

International Class: E03B-003/02; B01D-021/00; C02F-001/00; E03B-003/03; E03B-003/40; E03F-001/00; B01D-024/02; B01D-029/31

ABSTRACT

PROBLEM TO BE SOLVED: To provide an effective and convenient **rainwater** treatment device that divides **rainwater** at the beginning of **rainfall** from **rainwater** during **rainfall**, efficiently removes **soil** such as dust, oil, sands, etc. from both **rainwater**, send purified **rainwater** to a **rainwater** reservoir, and also purifies the initial **rainwater** so as to collect as much **rainwater** as possible.

SOLUTION: The system allows mixtures like sands, etc. heavier than water not removed by a primary treatment device equipped at an inflow tube, to settle in an inflow tank, and drains dust, etc. lighter than water to a drain tank through an **overflow tube**. Purified **rainwater collected** in a stay tank is sent to an upper water collection and treatment layer at ground surface for settlement and filtration for the purpose of further purification, and then sent to the **rainwater** reservoir via a **permeation tube** and a **water collecting tube**.

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26/9/2 (Item 1 from file: 89) [Links](#)

GeoRef

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02026806 Georef No.: 95-58933

Monograph Title: Characterization of soil cover and estimation of water **infiltration** at Central Facilities area landfill II, Idaho National Engineering Laboratory

Author: Hall, L. Flint

Date: 1992 302 p.

University: University of Idaho, Moscow, ID, United States,

Degree Level: Master's

Country of Publication: United States

Refs.: 35

Document Type: Thesis

Bibliographic Level: Monographic

Illustrations: illus.

Language: English

Abstract: Physical properties of the soil cover at Central Facilities Area Landfill II, Idaho National Engineering Laboratory, were spatially characterized, and a soil-water balance was computed to estimate water **infiltration** through the cover. This effort was part of a larger program conducted by EG&G Idaho, Inc., to develop a groundwater monitoring plan required for the site under the Resource Conservation and Recovery Act (RCRA). The sampling program emphasized soil properties that could be measured with a minimum disturbance of the existing cover. For 60 locations, in-situ density and moisture content were measured with a nuclear gauge, and the vertical thickness of the landfill cover was measured by boring with a small-diameter auger. Disturbed soil specimens were collected at 30-cm depth intervals through the entire cover thickness at 19 of the 60 locations. Gravimetric water contents and particle-size distributions were obtained for these specimens via laboratory analyses. Also, in-situ drainage tests were conducted to estimate field capacity at eight of these locations. Casted-block soil specimens and driven-tube soil specimens were collected for subsequent laboratory tests, which included saturated hydraulic conductivity, capillary pressure-moisture content, and volume-mass determinations. Remolded cores comprised of the fine-fraction (<2 mm) sampled from locations corresponding to the casted-blocks and in-situ drainage tests were analyzed for saturated hydraulic conductivity and capillary pressure vs. moisture content relationships. Analyses of field specimens indicated that the landfill cover could be divided into an upper and lower layer based on physical properties, with gravel content and saturated hydraulic conductivity increasing, and soil-water storage decreasing, from the upper to the lower layer. Analyses also suggested that hydraulic properties of the cover material can be estimated by using properties of the fine fraction and the relationship between the volume fraction of fines and the mass fraction of fines. Historical meteorological data from a 31-year record were used to estimate the water available (**precipitation**) for **infiltration** through the soil cover per water year. The water available was combined with spatial estimates of soil cover thickness and the mass fraction of fines, volume-to-mass fraction relationships for the fines, and unit soil water storage per layer, to generate spatial estimates of available storage and annual **infiltration** through the cover material. Results of these spatial storage calculations suggest that the relatively thin, gravelly soil material comprising the cover of Landfill II, allows water **infiltration** to landfill wastes approximately 9 out of every 10 years. Relative timing of **precipitation** and energy available for consumptive use of that **precipitation** were critical in this water-budget modeling. **Infiltration** through the landfill cover would be prevented through construction of an additional cap consisting of 0.45 m of a silty loam material locally available. The cap should be contoured to encourage **runoff** (and prevent ponding) and should be seeded with a crop whose root depth approaches the cover thickness.

Descriptors: characterization; ground water; hydraulic conductivity; Idaho; Idaho National Engineering Laboratory;

in situ; **infiltration**; landfills; moisture; **soil-water balance**; soils; storage; United States
Section Headings: 21 (Hydrogeology);
Georef Update: 199511

GeoRef, Copyright 1995, American Geological Institute.

30/9/10 (Item 5 from file: 8) [Links](#)

Ei Compendex(R)

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00913038 E.I. Monthly No: EI8004032772 E.I. Yearly No: EI80079657

Title: RUNOFF REDUCTION AND AIR VENTING WITH SHALLOW SUBSURFACE DRAINAGE.

Author: Breckenridge, R. P.; Jarrett, A. R.; Hoover, J. R.

Corporate Source: Pa State Univ, University Park

Source: Pap ASAE for Presentation at Jt ASAE and CSAE (Can Soc Agric Eng) Summer Meet, Univ of Manit, Winnipeg, Jun 24-27 1979. Publ by ASAE, St. Joseph, Mich, 1979 Pap 79-2034, 15 p

Publication Year: 1979

CODEN: AAEP CZ **ISSN:** 0145-0166

Language: ENGLISH

Journal Announcement: 8004

Abstract: The effect of entrapped soil air on the rainfall-**runoff** relationship was investigated on a soil that had an impervious layer present within the profile. When the air in the soil system was vented by a drain **tube** placed just above the impervious layer, the **infiltration** rate increased from 21 to 75 percent depending on soil conditions. As the disturbed Buchanan soil settled, soil pore sizes became more conducive to entrapping soil air. The influence of various degrees of tillage on soil air was evaluated to determine its effect on the rainfall-**runoff** relationship. Refs.

Descriptors: *SOILS--*Permeability; **RUNOFF**; RAIN AND RAINFALL; DRAINAGE; AGRICULTURAL ENGINEERING

Identifiers: RAINFALL-**RUNOFF** RELATIONSHIPS; **INFILTRATION**; AGRICULTURAL SOILS

Classification Codes:

483 (Soil Mechanics & Foundations); 442 (Flood Control & Land Reclamation); 443 (Meteorology); 631 (Fluid Flow & Hydrodynamics); 821 (Agricultural Equipment & Methods)

48 (ENGINEERING GEOLOGY); 44 (WATER & WATERWORKS ENGINEERING); 63 (FLUID DYNAMICS & VACUUM TECHNOLOGY); 82 (AGRICULTURE & FOOD TECHNOLOGY)

30/9/12 (Item 2 from file: 34) [Links](#)

Fulltext available through: [USPTO Full Text Retrieval Options](#)

SciSearch(R) Cited Ref Sci

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06037458 **Genuine Article#:** XQ937 **Number of References:** 23

A test of TOPMODEL's ability to predict spatially distributed groundwater levels

Author: Seibert J (REPRINT) ; Bishop KH; Nyberg L

Corporate Source: UPPSALA UNIV,DEPT HYDROL, INST EARTH SCI, NORBYVAGEN 22/S-75236
UPPSALA//SWEDEN/ (REPRINT)

Journal: HYDROLOGICAL PROCESSES , 1997 , V 11 , N9 (JUL) , P 1131-1144

ISSN: 0885-6087 **Publication date:** 19970700

Publisher: JOHN WILEY & SONS LTD , BAFFINS LANE CHICHESTER, W SUSSEX, ENGLAND PO19 1UD

Language: English **Document Type:** ARTICLE

Geographic Location: SWEDEN

Subfile: CC AGRI--Current Contents, Agriculture, Biology & Environmental Sciences

Journal Subject Category: WATER RESOURCES

Abstract: TOPMODEL was calibrated to a small catchment using precipitation and **runoff** data. Acceptable fits of simulated and observed **runoff** were obtained during both the calibration and validation periods. Predictions of groundwater levels using this calibration did not agree well with observations at the 37 points within the catchment where groundwater levels were measured, including three locations with continuous recordings. Groundwater level observations at one single point in time, however, sufficed to calibrate new topographic-soil indices that improved the prediction of the local groundwater levels at the observed **tubes**. This suggests that spatially distributed calibration data are necessary to exploit reliably TOPMODEL's ability to predict spatially distributed hydrology. The mean or recalibrated transmissivity values at these 37 points differed from the catchment mean as determined by the precipitation- **runoff** calibration. Thus, while groundwater information can help in predicting groundwater levels at specific locations, increasing the number of local groundwater level measurements is not sufficient to improve the spatially distributed representation of subsurface flow by TOPMODEL for the catchment as a whole, as long as the groundwater information is not integrated in the precipitation-**runoff** calibration. (C) 1997 by John Wiley & Sons, Ltd.

Descriptors--Author Keywords: TOPMODEL ; groundwater levels ; model validation

Identifiers-- KeyWord Plus(R): SWISS CATCHMENT; STORM **RUNOFF**; FLOW; WATER; MODEL; GARDSJON; SOIL

Research Fronts: 95-0036 001 (DISTRIBUTED HYDROLOGIC MODEL; WATER CYCLE; SMALL TROPICAL CATCHMENT AREAS)

95-1065 001 (GREEN-AMPT EFFECTIVE HYDRAULIC CONDUCTIVITY; PONDED **INFILTRATION**; MODELS OF SOILS; MULTILAYERED POROELASTIC MEDIUM; MECHANICAL PARAMETERS)

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30/9/19 (Item 9 from file: 34) [Links](#)

SciSearch(R) Cited Ref Sci

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01027919 **Genuine Article#:** FP651 **Number of References:** 75

TERRAIN-BASED CATCHMENT PARTITIONING AND RUNOFF PREDICTION USING VECTOR ELEVATION DATA

Author: MOORE ID; GRAYSON RB

Corporate Source: AUSTRALIAN NATL UNIV,CTR RESOURCE & ENVIRONM STUDIES/CANBERRA/ACT 2601/AUSTRALIA/; UNIV MINNESOTA,DEPT AGR ENGN/ST PAUL//MN/55108; UNIV MELBOURNE,CTR ENVIRONM APPL HYDROL,DEPT CIVIL & AGR ENGN/PARKVILLE/VIC 3052/AUSTRALIA/

Journal: WATER RESOURCES RESEARCH , 1991 , V 27 , N6 , P 1177-1191

Language: ENGLISH **Document Type:** ARTICLE

Geographic Location: USA; AUSTRALIA

Subfile: SciSearch; CC AGRI--Current Contents, Agriculture, Biology & Environmental Sciences; CC ENGI--Current Contents, Engineering, Technology & Applied Sciences

Journal Subject Category: WATER RESOURCES; ENVIRONMENTAL SCIENCES; LIMNOLOGY

Abstract: An automated method of partitioning catchments into interconnected elements using a "stream tube" approach and vector or contour-based digital elevation models is briefly described. With this form of partitioning, hydrologic models can be structured based on the hydraulics of flow within a catchment and the effects of topography on runoff producing mechanisms and spatially distributed flow characteristics (such as flow depth and velocity) can be directly, and realistically, accounted for in the models. The method allows complex three-dimensional flow problems to be reduced to a series of coupled one-dimensional problems in areas with complex terrain. Two simple process-oriented hydrologic models that demonstrate the utility of this form of partitioning are presented. The first models subsurface flow-saturation overland flow and the second models Hortonian overland flow. Observed and predicted runoff hydrographs and the dynamic expansion and contraction of runoff source areas on a small laboratory microcatchment are presented. Also shown are predicted runoff hydrographs and surface flow velocities on a small rangeland catchment in the United States.

Identifiers-- KeyWords Plus: SUBSURFACE STORMFLOW; SPATIAL VARIABILITY; SOIL-MOISTURE; OVERLAND-FLOW; MODEL; WATERSHEDS; HYDROLOGY; SURFACE; INFILTRATION; SYSTEM

Research Fronts: 89-1481 001 (UNSATURATED HYDRAULIC CONDUCTIVITY; MODELING SUBSURFACE FLOW; TRANSPORT IN POROUS-MEDIA; OIL INFILTRATION; DRY SOILS) 89-5977 001 (CONSTANT RATE RAINFALL INFILTRATION; UNSATURATED HYDRAULIC CONDUCTIVITY; VERSATILE NONLINEAR MODEL; SURFACE RUNOFF; WATER SORPTIVITY; MOISTURE PROFILE)

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30/9/45 (Item 1 from file: 89) [Links](#)

Fulltext available through: [USPTO Full Text Retrieval Options](#)

GeoRef

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02785208 Georef No.: 05-048682

Title: A comparative study in modelling runoff and its components in two mountainous catchments

Author: Gurtz, Joachim; Zappa, Massimiliano; Jasper, Karsten; Lang, Herbert; Verbunt, Mark; Badoux, Alexandre; Vitvar, Tomas

Corporate Source: Swiss Federal Institute of Technology (ETH) Zurich, Institute for Atmosphere and Climate Science, Zurich, Switzerland

Corporate Source: ; Oregon Sate University, United States, Wageningen University, Netherlands, Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), Switzerland, State University of New York, United States

Monograph Title: Runoff generation and implications for river basin modelling

Editor: Uhlenbrook, Stefan; McDonnell, Jeff; Leibundgut, Chris

Corporate Source: University of Freiburg, Institute of Hydrology, Freiburg, Federal Republic of Germany

Conference Title: Runoff generation and implications for river basin modelling

Conference Location: Freiburg, Federal Republic of Germany,

Conference Date: Oct. 9-12, 2000

Publisher: John Wiley & Sons, New York, NY, United States

Source: Hydrological Processes vol. 17 no. 2; p. 297-311

Date: 20030215

Country of Publication: United States

ISSN: 0885-6087 **Refs.:** 26

Document Type: Serial; Conference document

Bibliographic Level: Analytic

Illustrations: illus. incl. 2 tables, sketch map

Language: English

Abstract: In mountainous catchments the quality of **runoff** modelling depends strongly on the assessment of the spatial differences in the generation of the various **runoff** components and of the flow paths as coupled with the amount and intensity of precipitation and/or the snow melting. These catchments are also suitable for the intercomparison of different kinds of hydrological models, particularly of different approaches for the simulation of **runoff** generation. Two differently structured catchment models were applied on the pre-alpine Rietholzbach research catchment (3.2 km (super 2)) within the period 1981-98 and on the high-alpine Dischmabach catchment (43 km (super 2)) within the period 1981-96 for the simulation of hydrological processes and of the **runoff** hydrographs. The models adopted are the more physically based WaSiM-ETH model, with grid-oriented computation of the water balance elements, and the rather conceptual PREVAH model, based on hydrological response units. The simulation results and the differences resulting from the application of the two models are discussed and compared with the observed catchment discharges, with measurements of evapotranspiration, soil moisture, outflow of a lysimeter, and of groundwater levels in three access **tubes**. The model intercomparison indicates that the two approaches for determining **runoff** generation with different degrees of complexity performed with similar statistical efficiency over a period longer than 15 years. The analysis of the simulated **runoff** components shows that the interflow is the main **runoff** component and that the portion of the **runoff** components depends strongly on the approach used. The snowmelt model component is of decisive importance in the snowmelt season and needs to take into account the role of air temperature and radiation for simulating **runoff** generation in a spatially distributed manner. Abstract Copyright (2003), Wiley Periodicals, Inc.

Coordinates: Latitude: N463000 ; N473000 ; Longitude: E0100000 ; E0090000

Descriptors: alpine environment; calibration; catchment hydrodynamics; Central Europe; discharge; Dischmabach Catchment; drainage basins; Europe; field studies; gauging; glaciers; ground water; hydrodynamics; hydrographs; hydrologic cycle; hydrology; **infiltration**; land cover; lysimeters; mathematical models; meltwater; PREVAH model; rainfall; recharge; Rietholzbach Catchment ; **runoff**; seasonal variations; simulation; snow; soil-water balance; soils; spatial data; spatial variations; streamflow; subalpine environment; Switzerland; terrestrial environment; theoretical models; WaSiM-ETH model; water balance; water storage; watersheds

Section Headings: 21 (Hydrogeology);

Georef Update: 200518

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30/9/48 (Item 1 from file: 292) [Links](#)

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00013857 **Supplier Number** 9904030

A simple portable rainfall simulator.

Khybri M.L.; Chandra S.

Indian Journal of Soil Conservation , 6/1 (13-16) , 1978

Document Type: Journal

Languages: English

Figures: figs, table, 10 refs.

Artificial rain of known drop sizes, drop distribution and kinetic energy can be produced with the help of a rainfall simulator. Rainfall stimulators can be used with advantage for studying **runoff**, soil loss and **infiltration** under controlled conditions. A **tubing** tip type rainfall simulator has been designed and described in this paper. The apparatus has an advantage of being simple and portable in working. It can be used under field conditions on a limited scale. With this system average drop size of 3.8 mm diameter is obtained with a maximum falling velocity of 6.4 meters/second. - Authors

Classification Code And Description:

71.6 (HYDROLOGY)

71.7 (METEOROLOGY AND CLIMATOLOGY)

Record History:

COMPLETED RECORD - January 1, 1980